THE NATCO HOUSE

AVERY LIBRARY
COLUMBIA UNIVERSITY

H. C. HANIFIN

The Natco House

FOR SIX THOUSAND DOLLARS

ATTRACTIVE
ECONOMICAL
DURABLE
FIREPROOF

PRICE, FIFTY CENTS

Published for the

NATIONAL FIRE PROOFING COMPANY

PITTSBURGH

BY ROGERS & MANSON, BOSTON

Copyright, 1912
By the National Fire Proofing Company

The Natco House

FOREWORD

THE first portion of this book is devoted to the presentation of a series of designs for a small house to be built of Natco Hollow Tile. The designs were submitted in competition by well-known architectural draftsmen.

The cost of a house built from one of these designs would approximate $6,000.

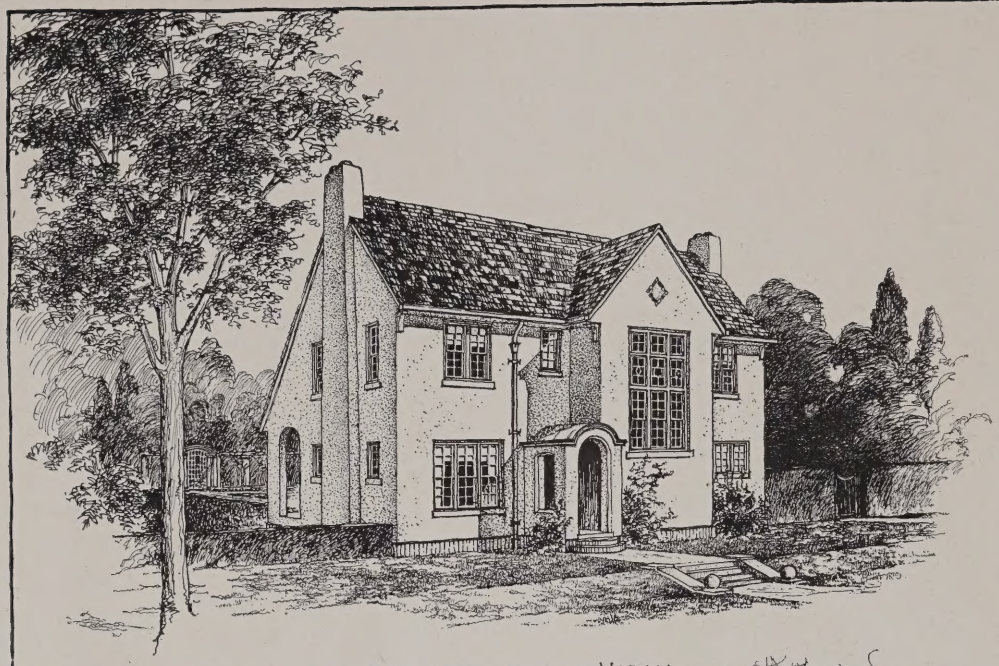
The competition which brought out these really splendid examples of domestic architecture was given primarily to encourage the building of a better class of small houses. The material of which they were designed to be built — Natco Hollow Tile — meets every requirement with respect to initial cost, durability, and cost of maintenance.

The most vitally important things which should be given consideration in modern home building are that the house shall be of good design and well built. This is equally true of the small house as well as the large. They give a value which is imperishable.

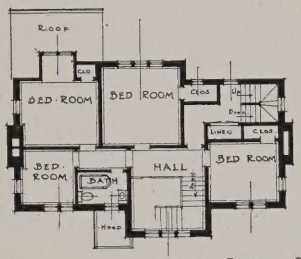
A poorly designed, poorly built house has a very limited market value to-day — it will have very much less to-morrow.

A well designed, well built house has a fixed market value — it is a good asset.

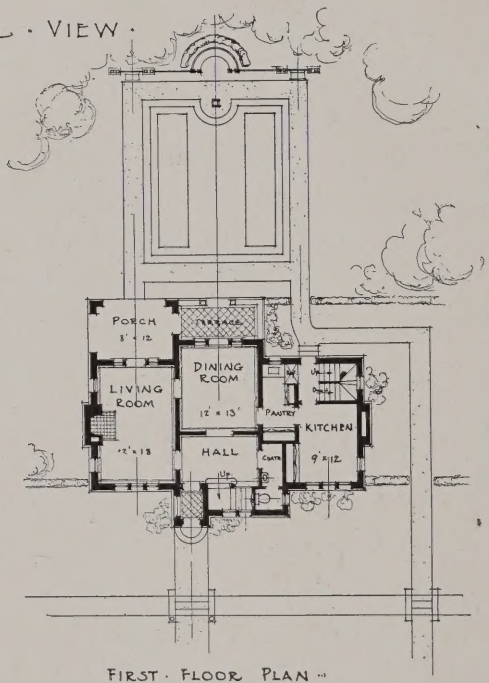
The second portion of the book is devoted to the presentation of a series of houses which have been built of Natco Hollow Tile. The examples are chosen from many hundreds which have been completed during the past year. They are the work of architects who are well known for their ability as designers and their intimate knowledge of the values of building materials.



· PERSPECTIVE · VIEW ·

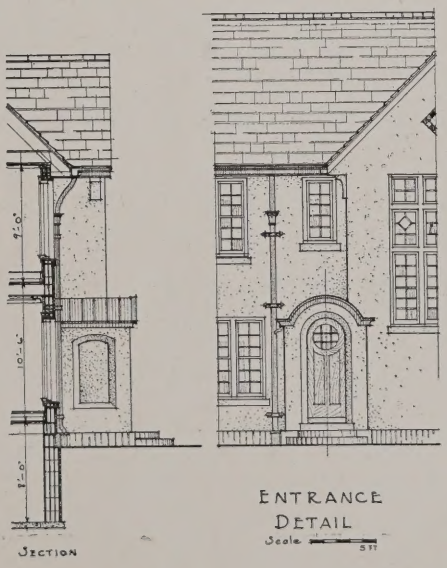


· SECOND · FLOOR · PLAN



FIRST · FLOOR · PLAN

Scale



SECTION

ENTRANCE DETAIL

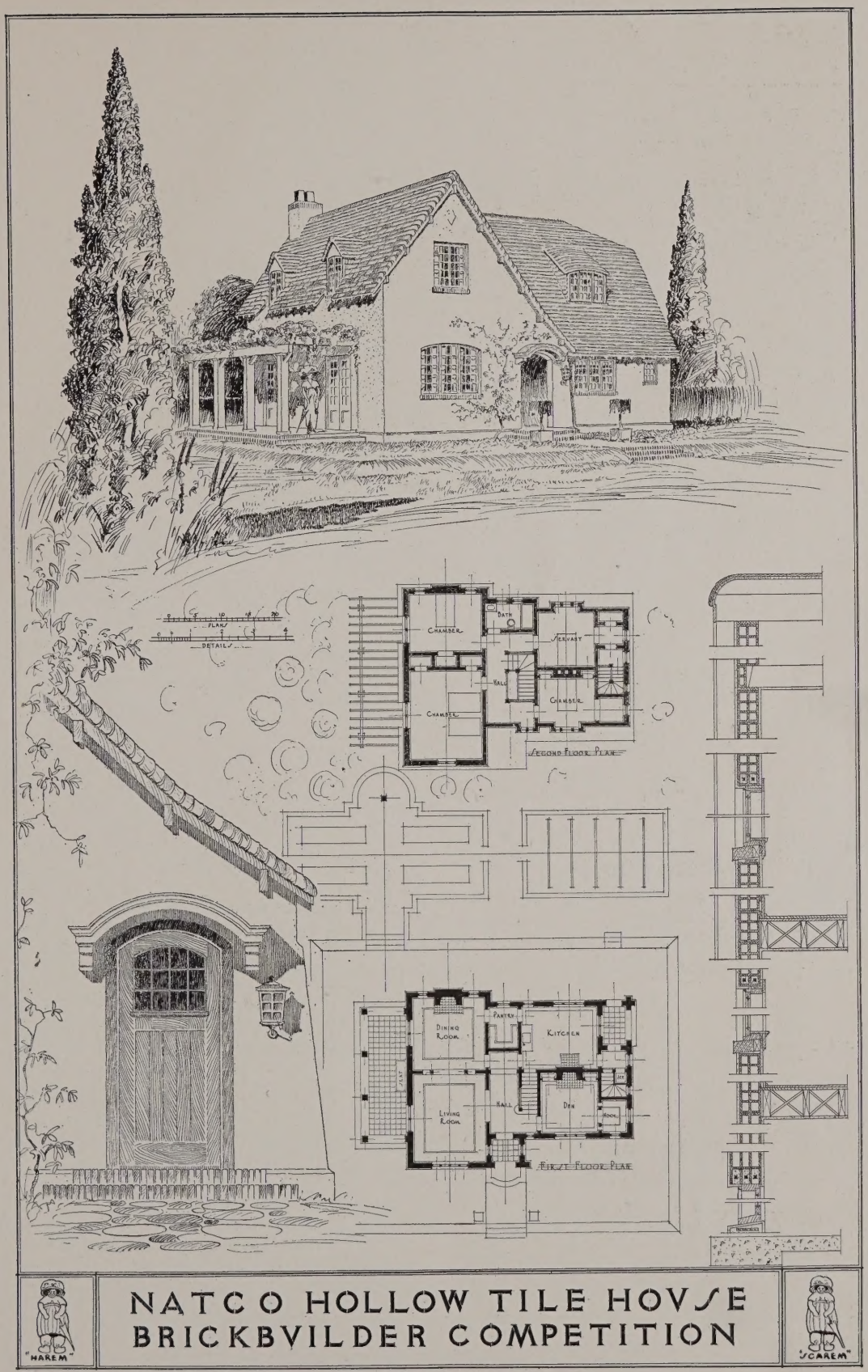
Scale

BRICKBUILDER COMPETITION

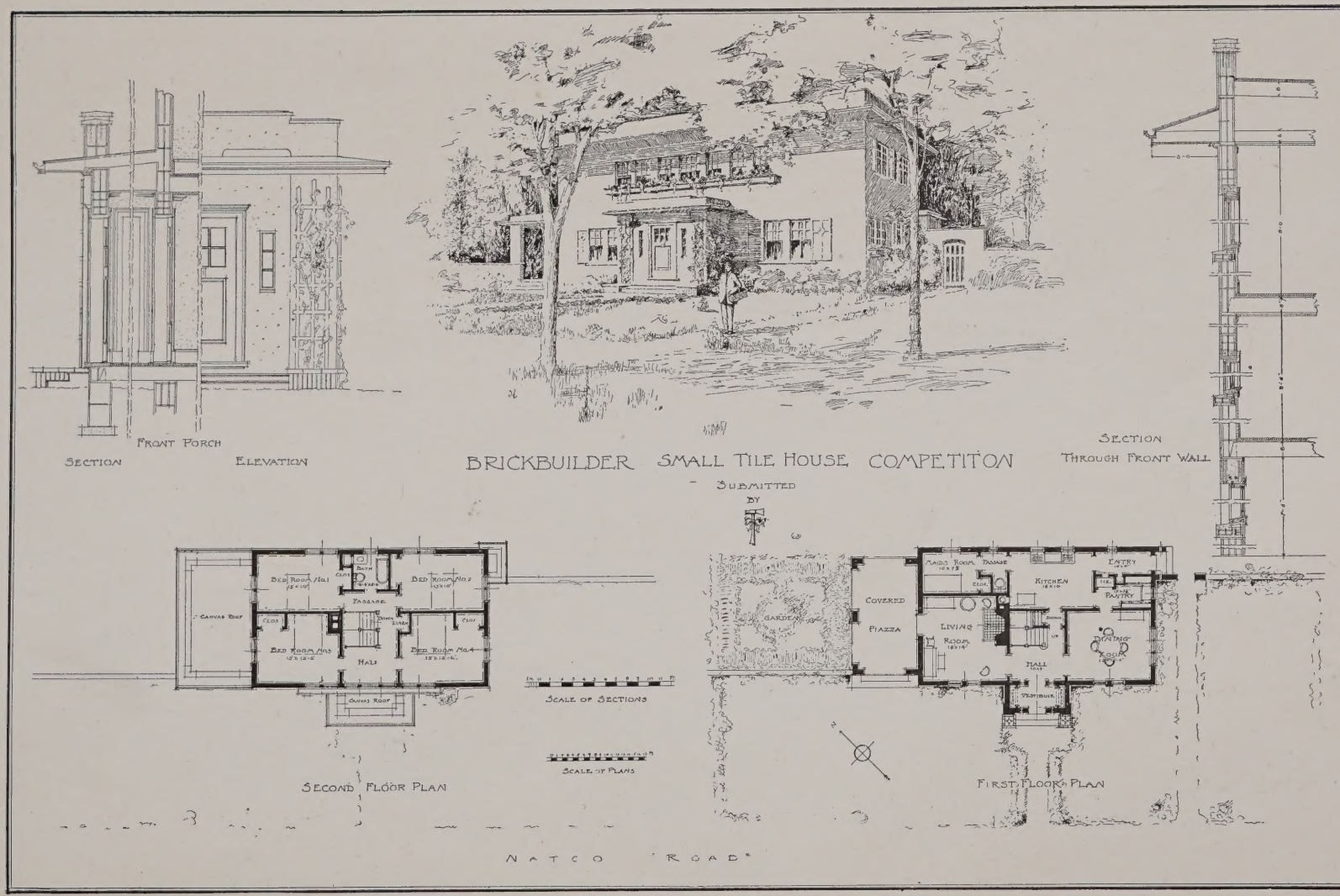
FOR · A · SMALL · HOUSE TO · BE · BUILT · OF NATCO · HOLLOW · TILE

· SUBMITTED BY ·

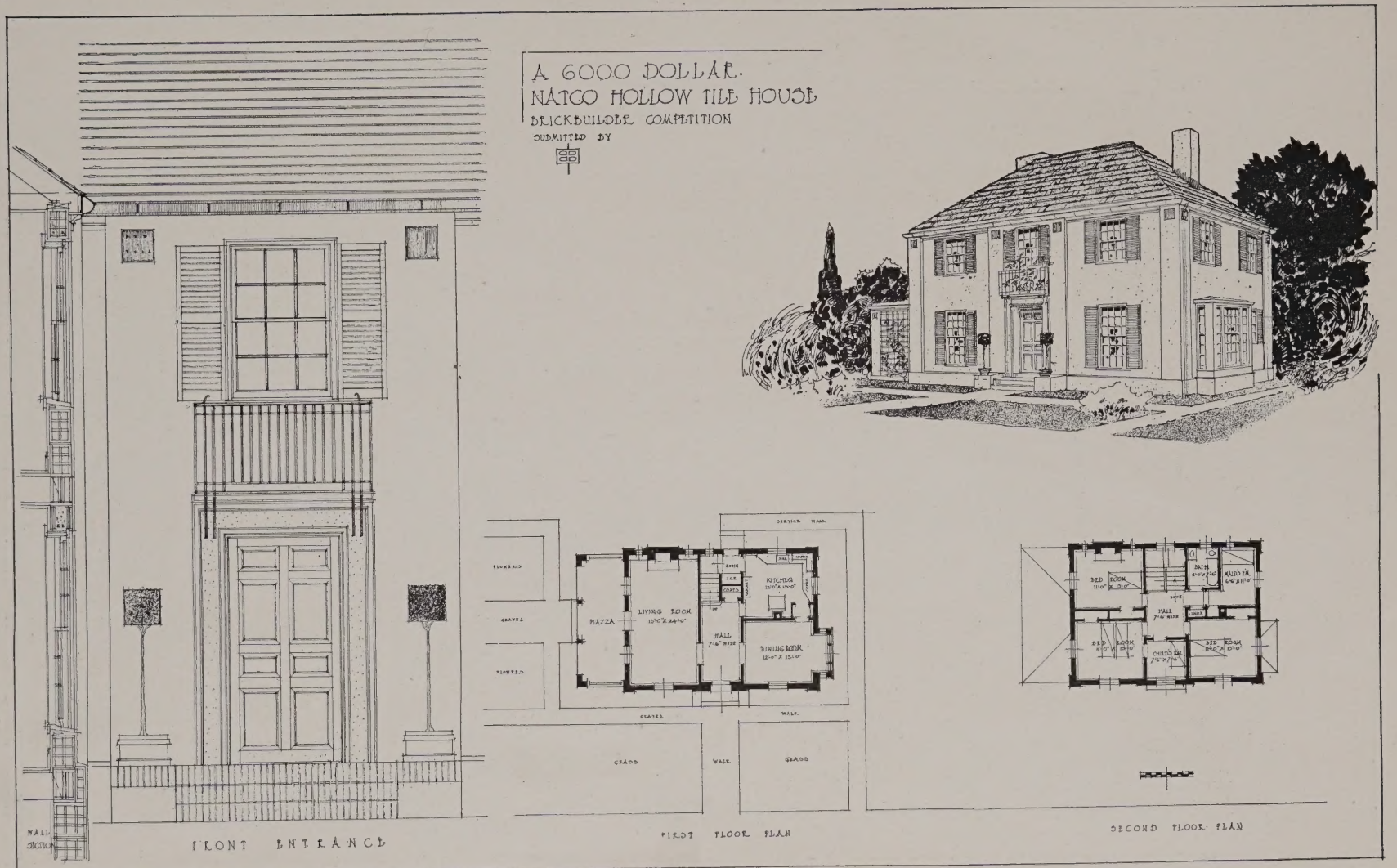
First Prize Design Submitted by Eugene L. Walter, 1301 Michigan St., Buffalo, N. Y.



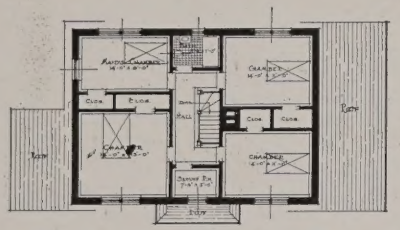
Second Prize Design Submitted by Jack Lehti, 4 Eye St., N. E., Washington, D. C.

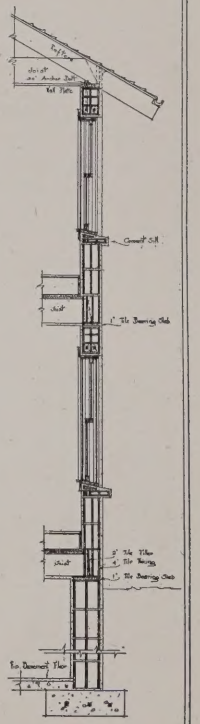


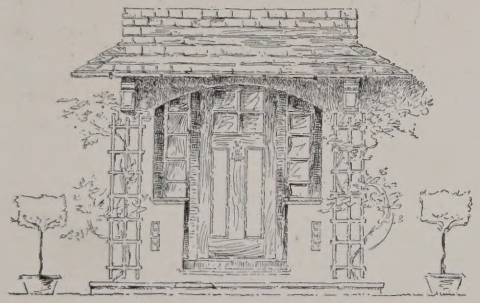
Third Prize Design Submitted by Herbert H. Bohachek, 463 Massachusetts Ave., Boston, Mass.

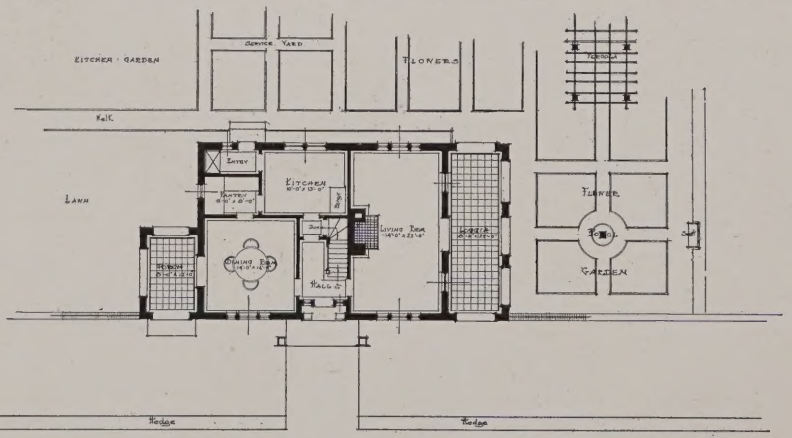


Fourth Prize Design Submitted by Francis D. Bulman, Ames Building, Boston, Mass.







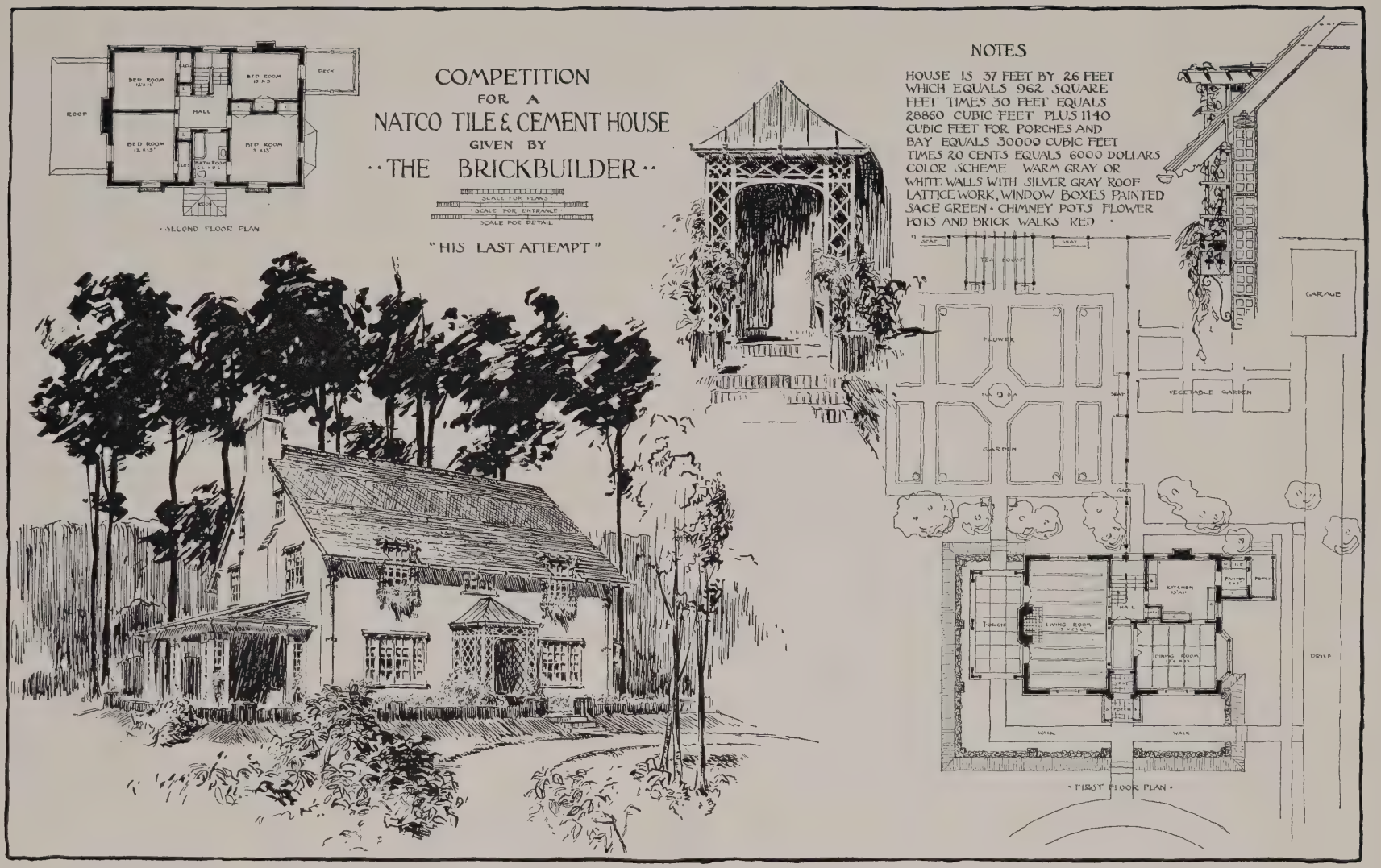


SVBMITTED BY
— RR —

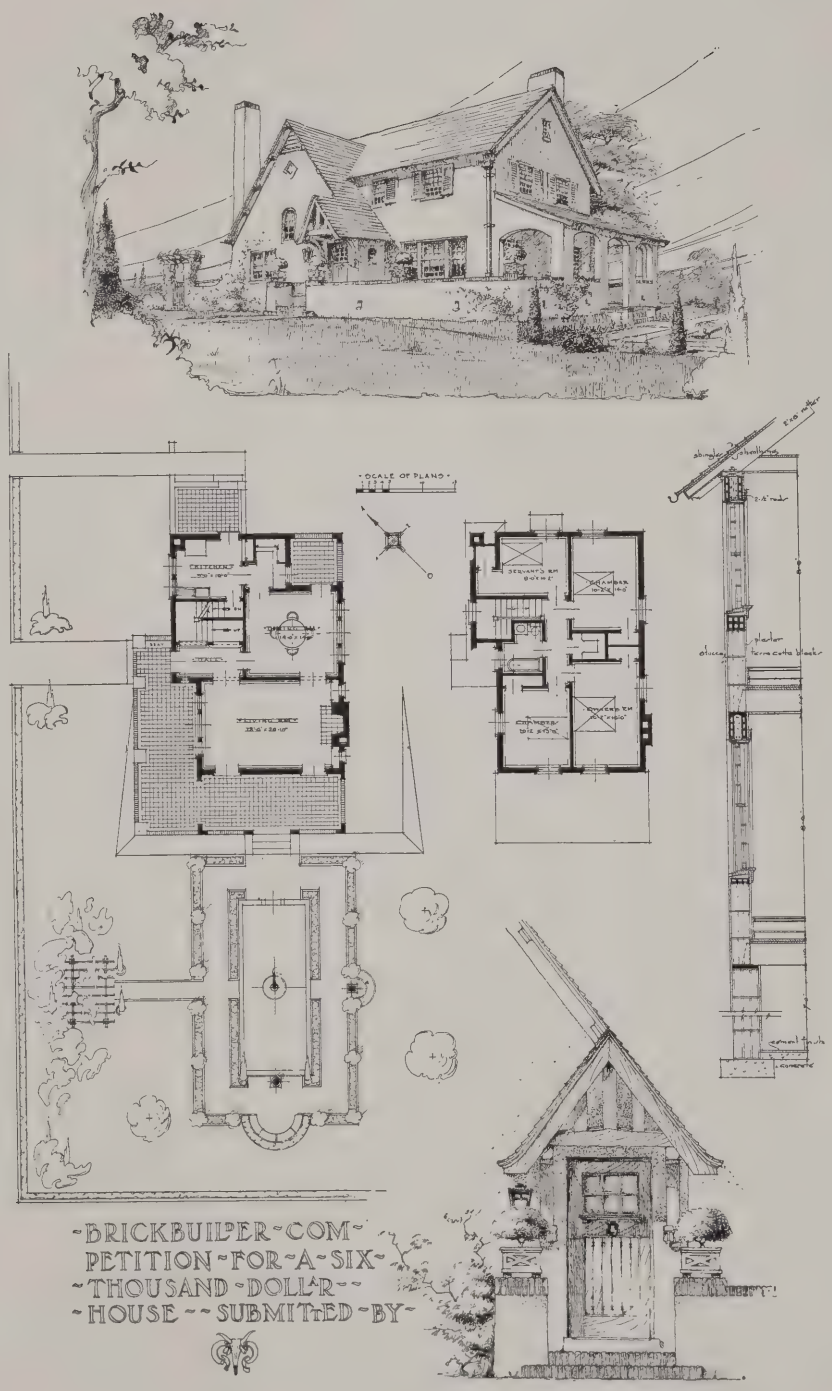
COMPETITION FOR A HOVSE OF HOLLOW TILE TO COST SIX THOVSAND DOLLARS

BRICKBVILDER
- 1911 -

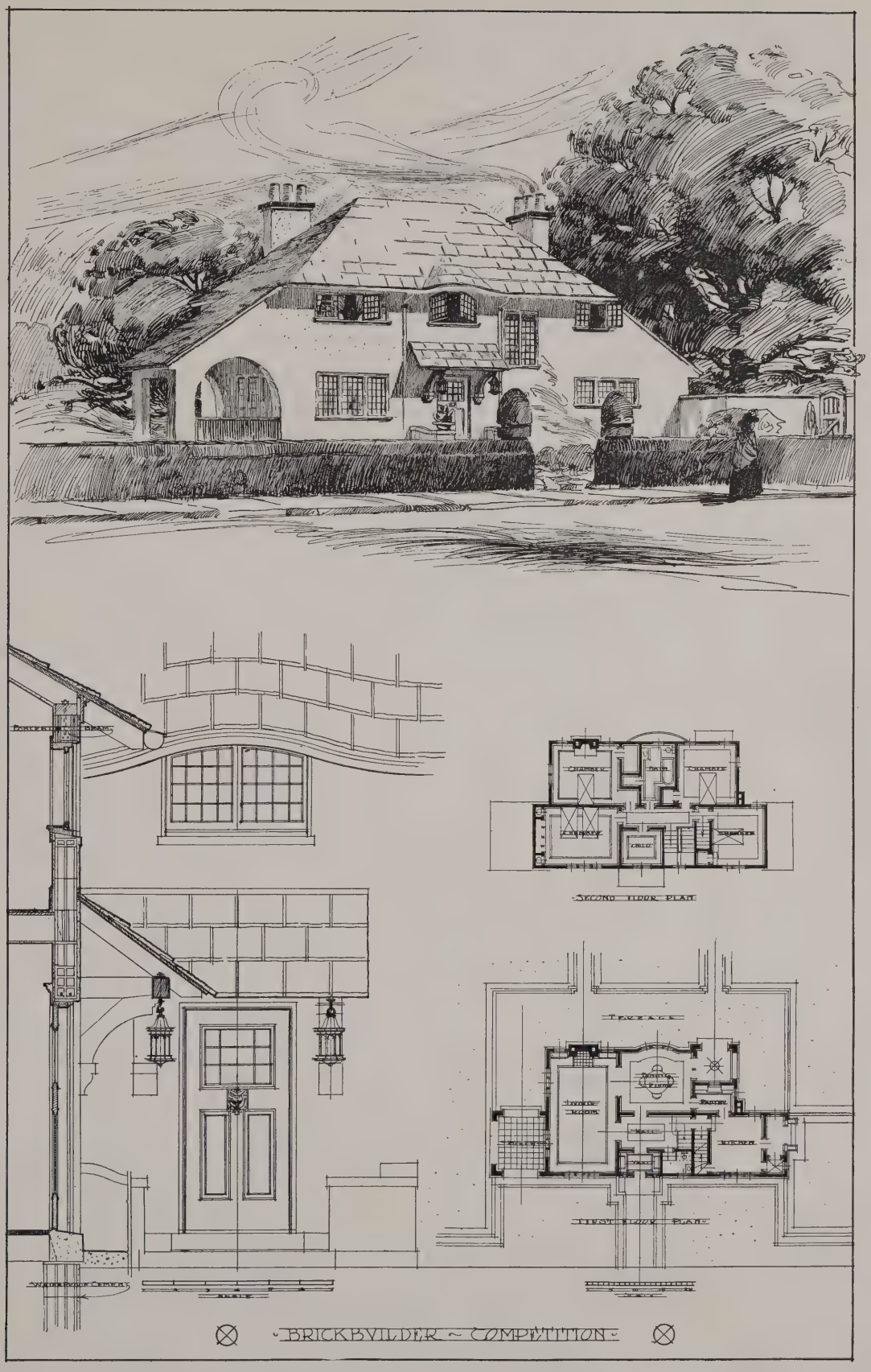
Mention Design Submitted by Frank M. Roberts and J. E. Hallaren, 15 Beacon St., Boston, Mass.



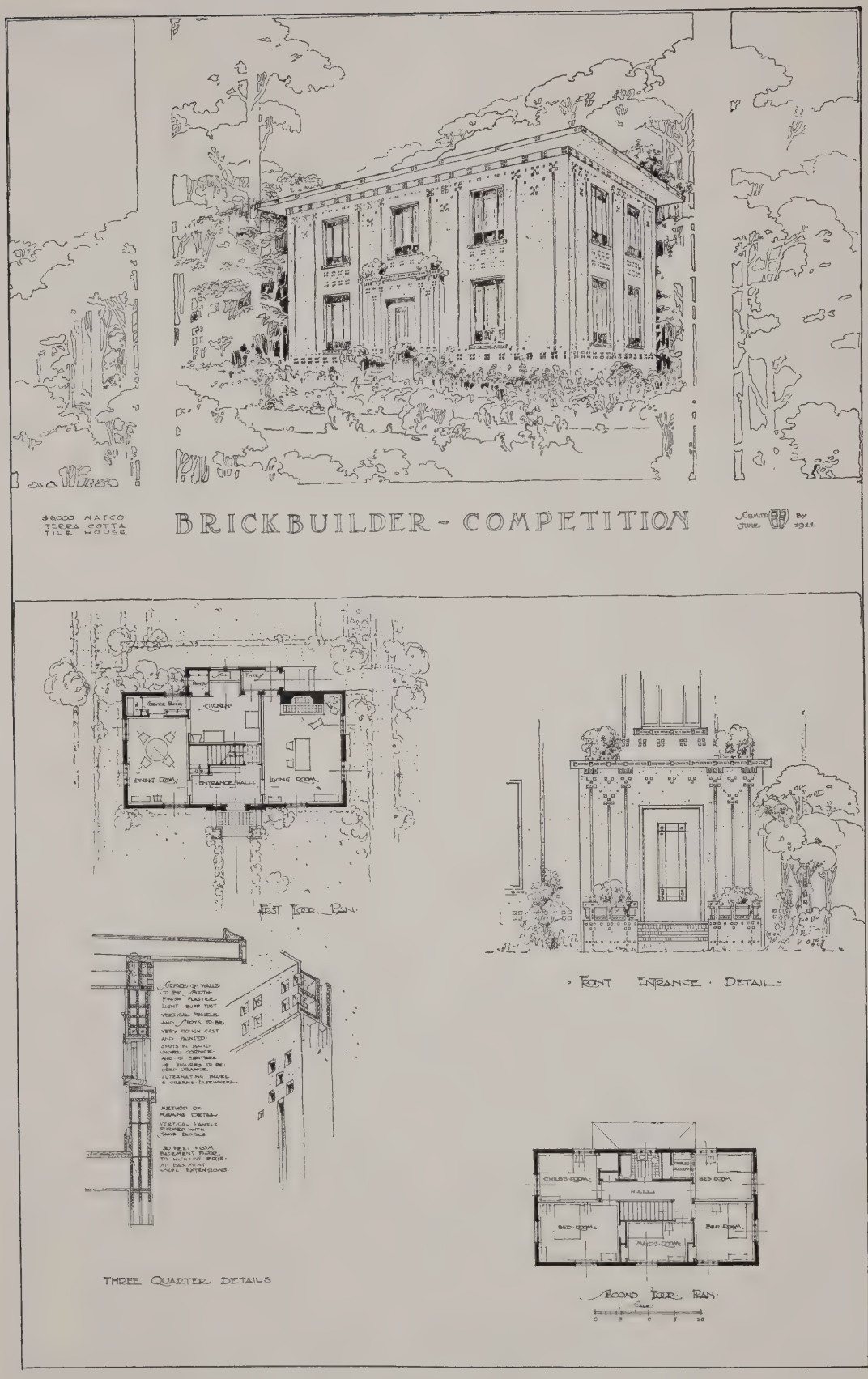
Mention Design Submitted by Charles Sumner Schneider, Schofield Building, Cleveland, Ohio.



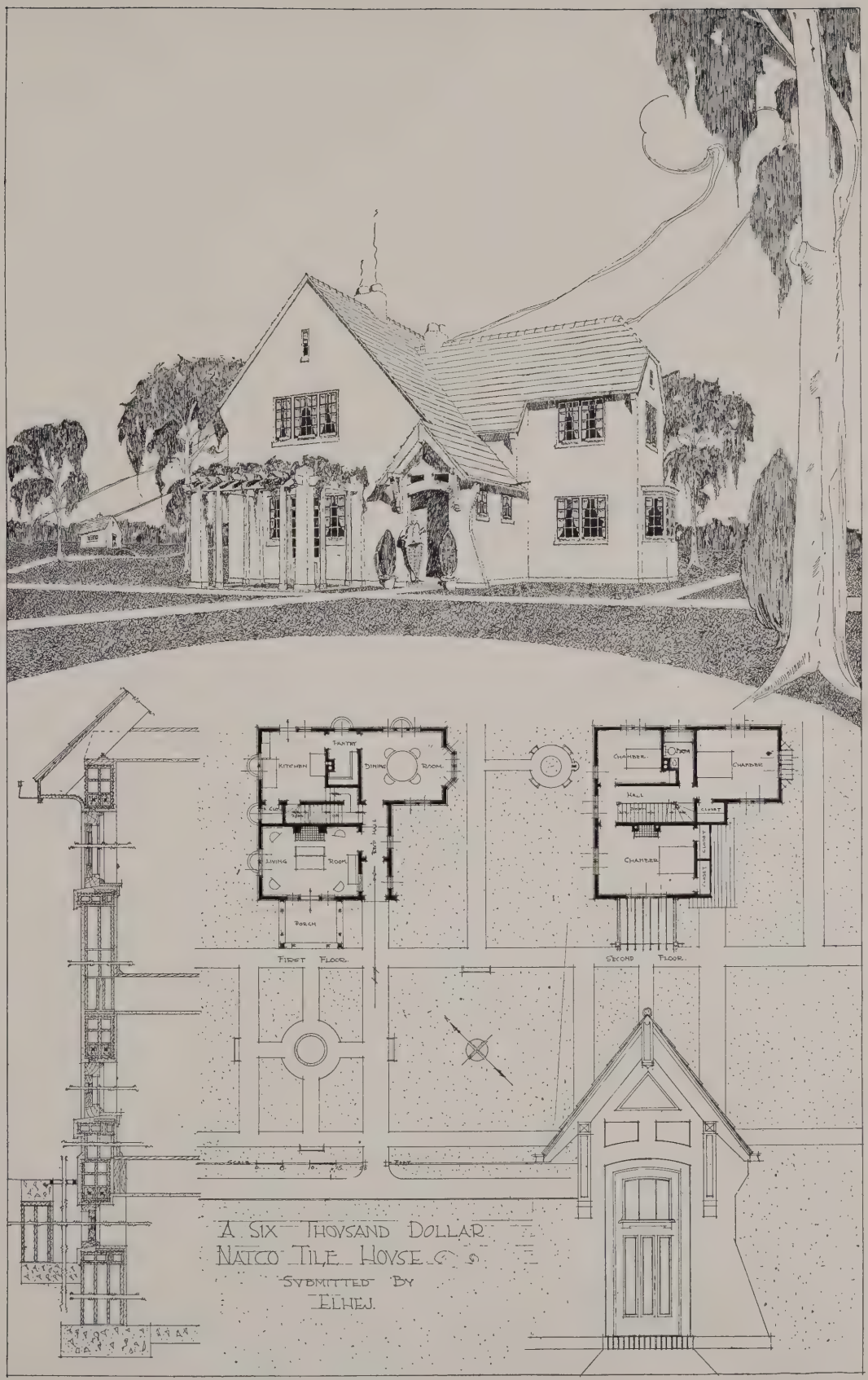
Mention Design Submitted by William W. Keefer, 2d, Lansdowne Court, Lansdowne, Pa.



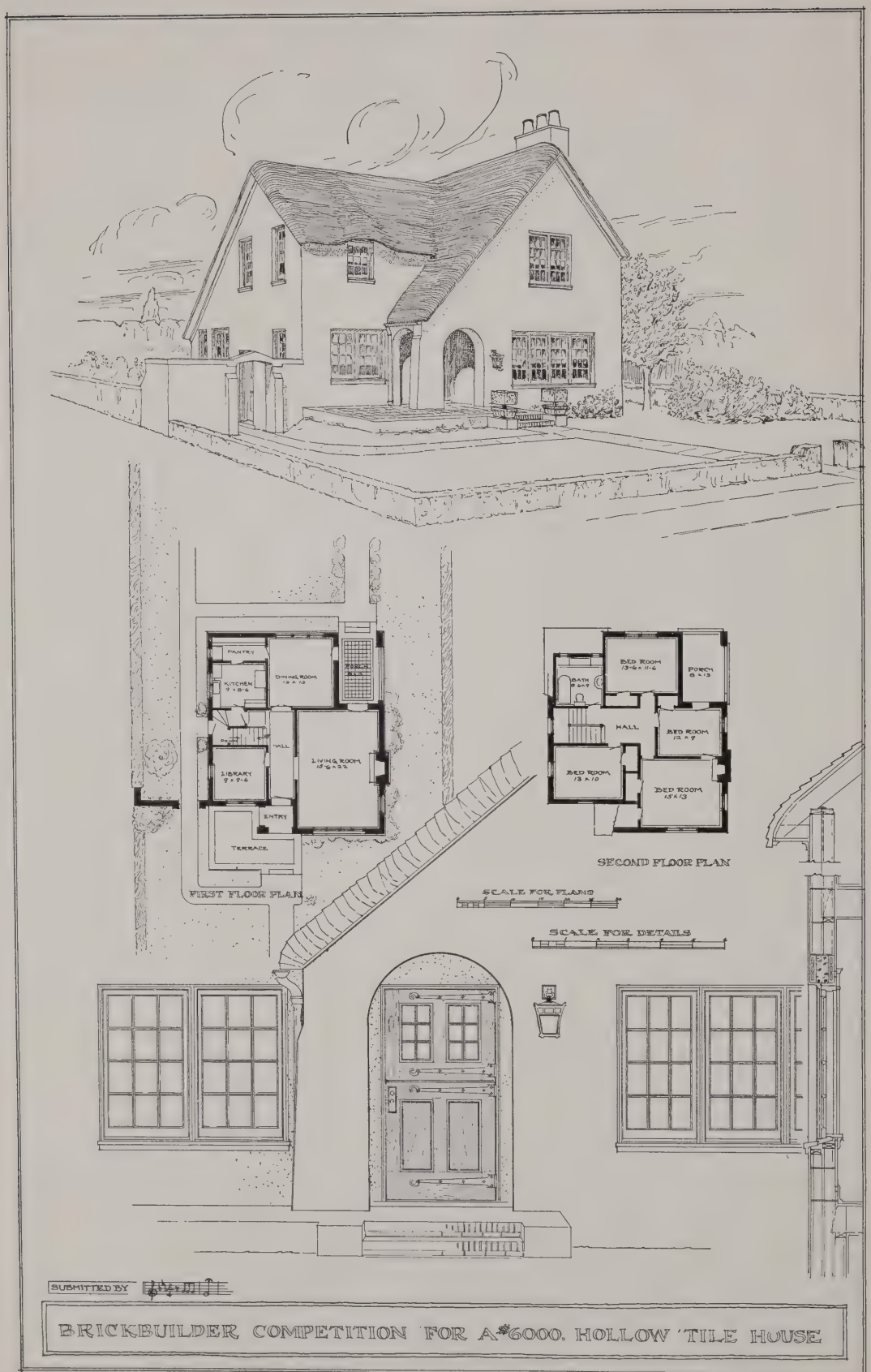
Mention Design Submitted by H. S. Hazen, Jr., 31 Beacon St., Boston, Mass.



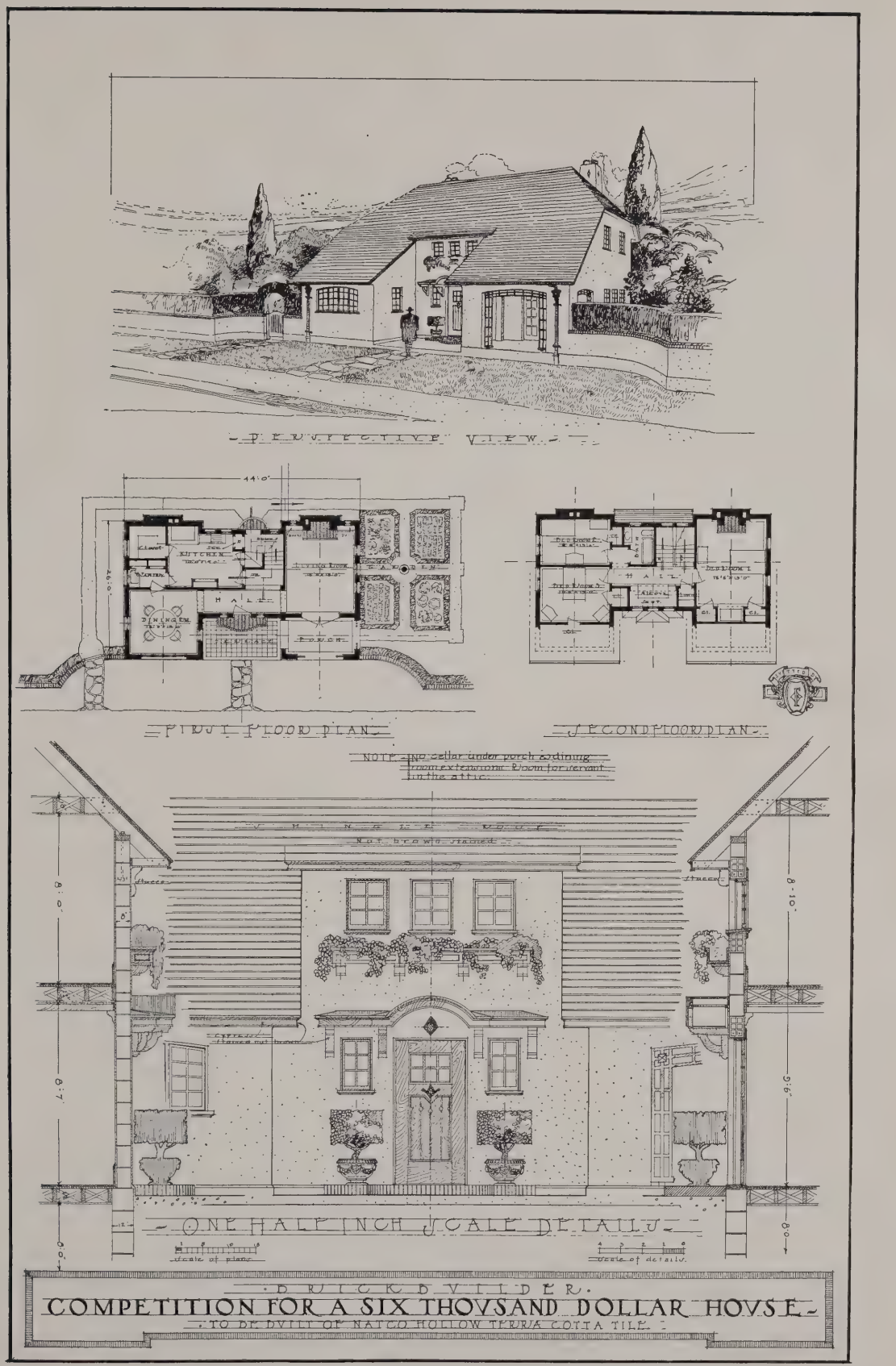
Mention Design Submitted by Ernest E. Weihe, 1671 Golden Gate Ave., San Francisco, Cal.



Mention Design Submitted by Gustave W. Aegerter, 314 N. Fourth St., St. Louis, Mo.



Design Submitted by F. Gordon Pickell, Union Trust Building, Detroit, Mich.


PERSPECTIVE VIEW
FIRST FLOOR PLAN
SECOND FLOOR PLAN
NOTE—No cellar under porch & dining room extension. Room for servant in the attic.
ONE HALF INCH SCALE DETAILS
BRICK BUILDER.
COMPETITION FOR A SIX THOUSAND DOLLAR HOUSE
TO BE BUILT OF NATCO HOLLOW TERRA COTTA TILE

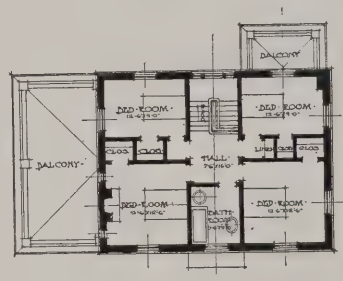
Design Submitted by Norman Biard Baker, 1516 Jacob St., Troy, N. Y.

PERSPECTIVE

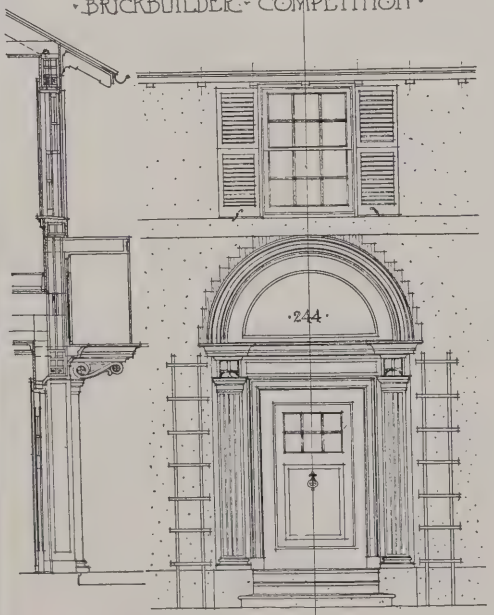
SCALE

A $6000 HOUSE TO BE BUILT OF NATCO HOLLOW TILE

BRICKBUILDER COMPETITION



SECOND FLOOR PLAN

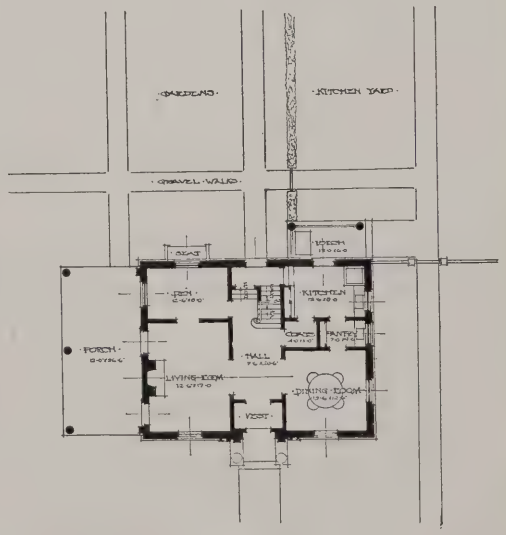


SECTION

ELEVATION

DETAIL OF ENTRANCE

SCALE

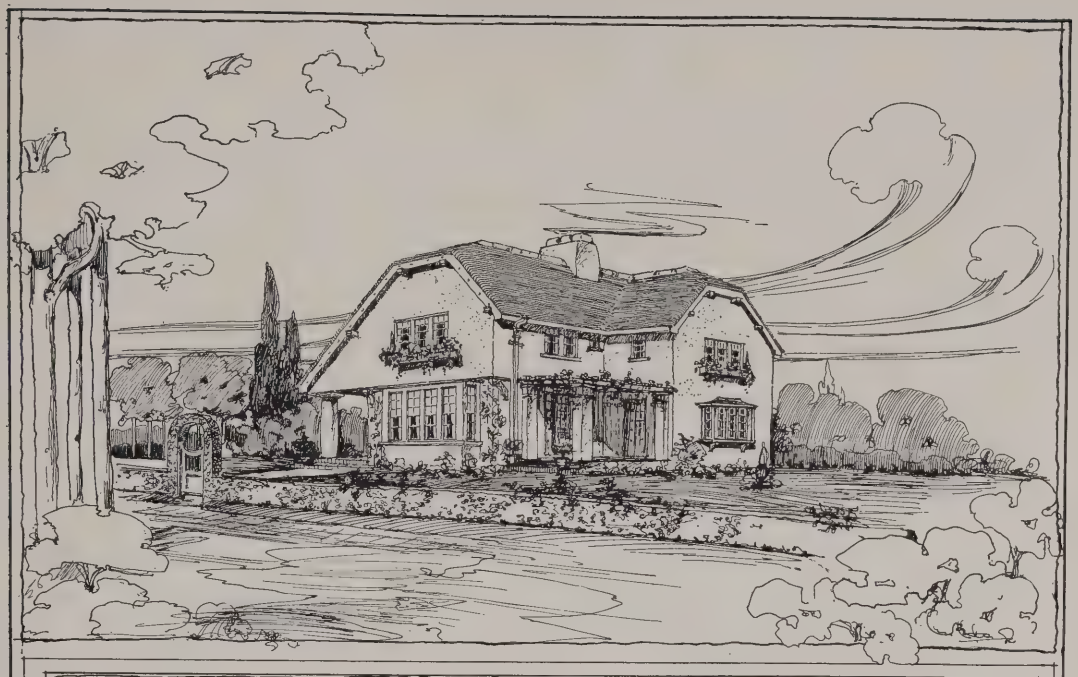


FIRST FLOOR PLAN

SCALE

SUBMITTED BY

Design Submitted by William R. Schmitt, 273 West 73d St., New York, N. Y.

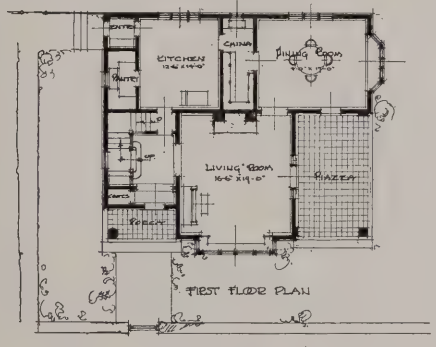


A SIX THOVSAND DOLLAR HOLLOW TILE HOVSE

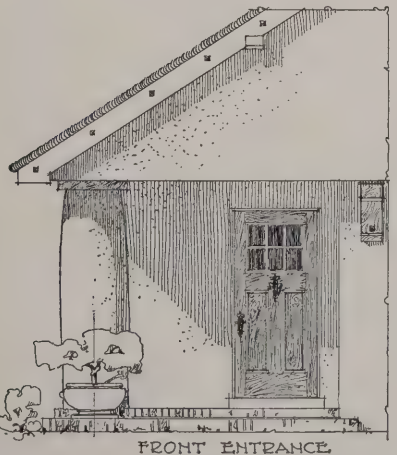
BRICK BVILDER~ COMPETITION

SVBMITTED BY

SCALE OF PLAN SCALE OF DETAIL

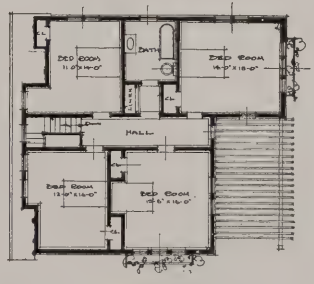


FIRST FLOOR PLAN

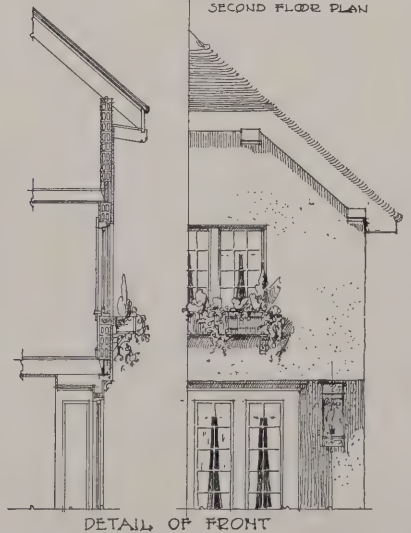


FRONT ENTRANCE

SCALE OF PLAN SCALE OF DETAIL

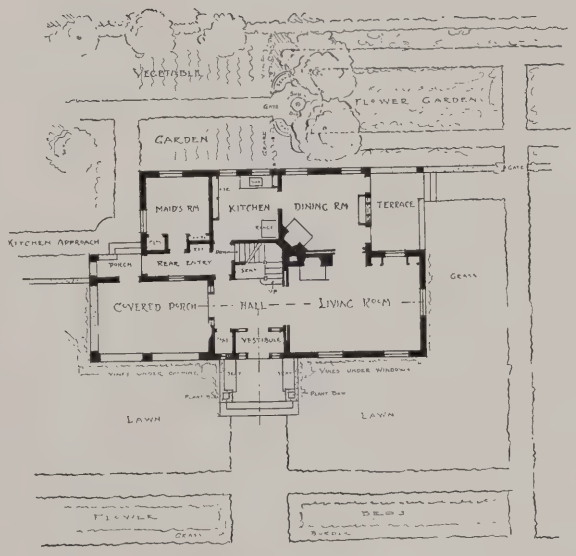


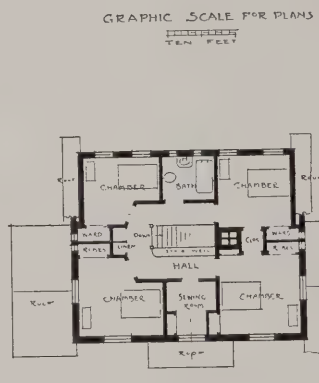
SECOND FLOOR PLAN

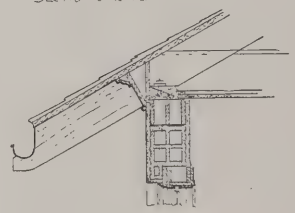


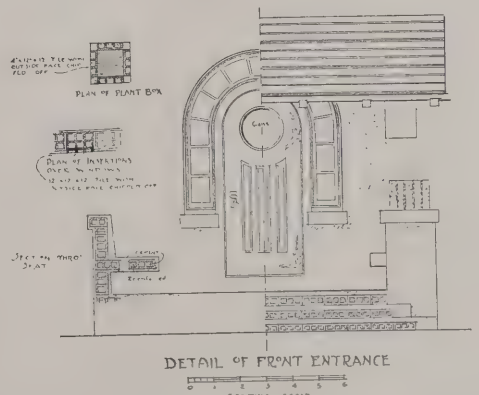
DETAIL OF FRONT

Design Submitted by George F. Blount and John M. Gray, 20 Beacon St., Boston, Mass.



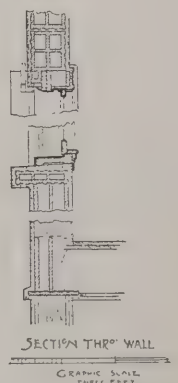




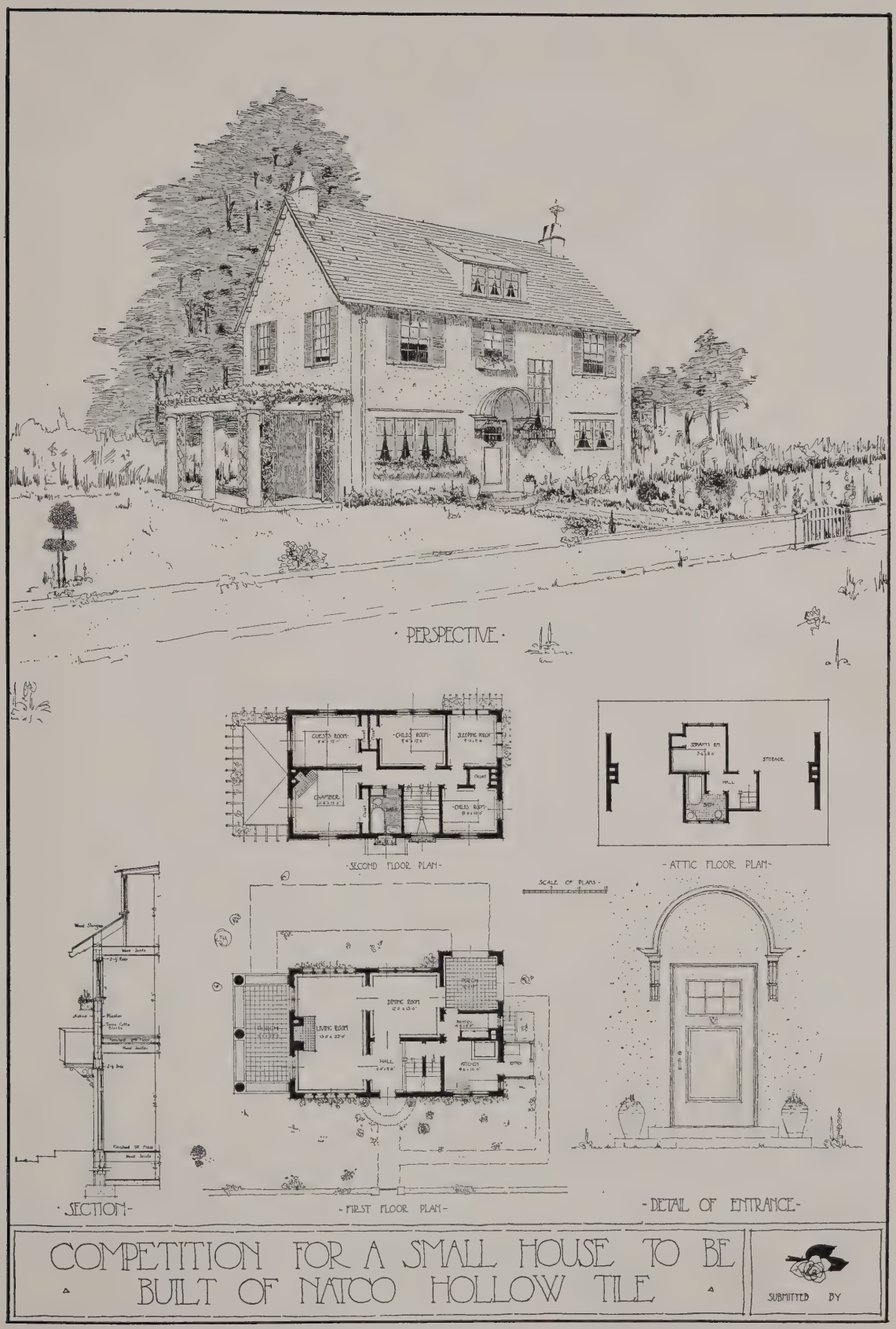


A $6000.00 HOUSE OF HOLLOW TILE

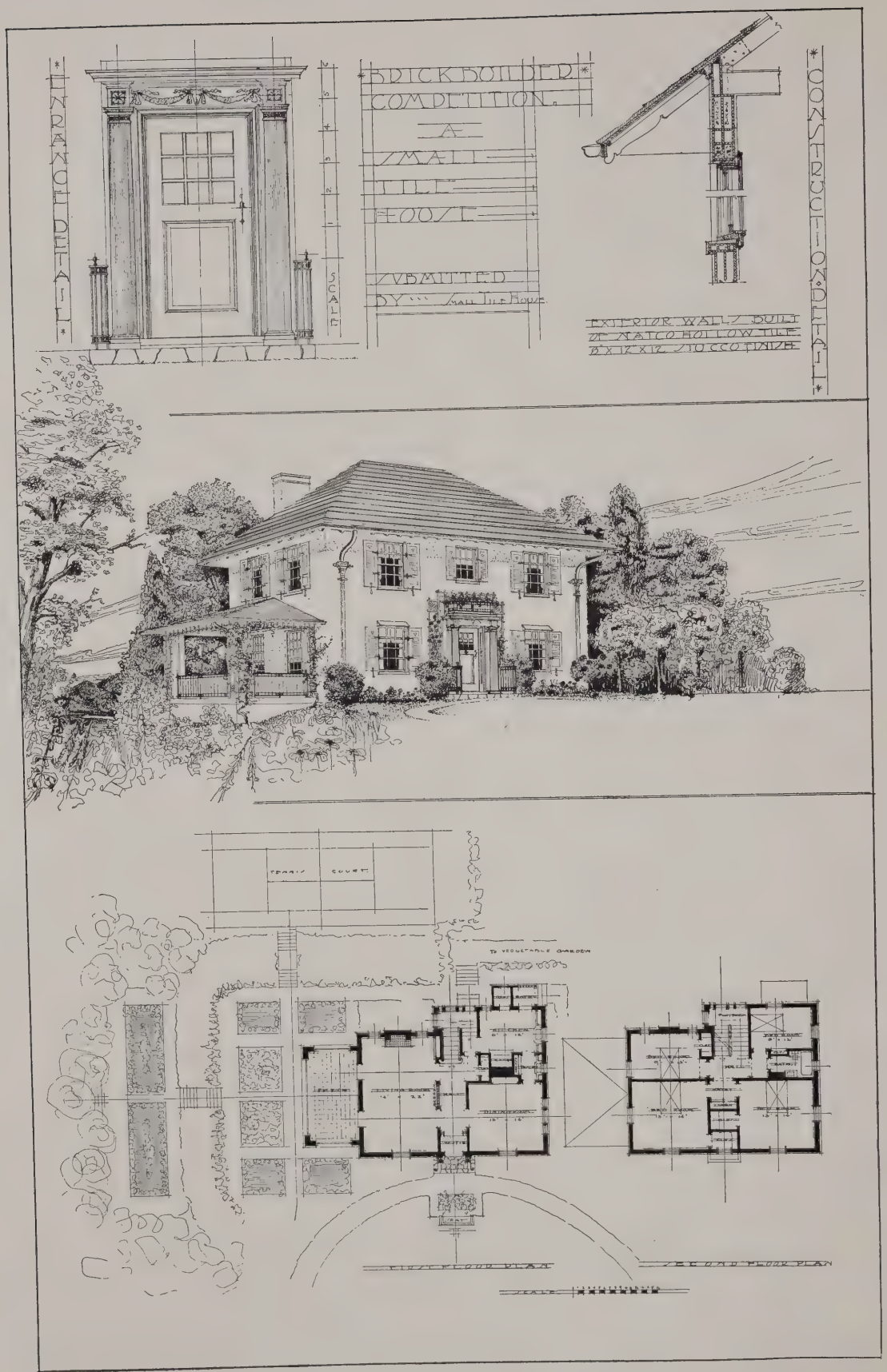
"THE BRICK BUILDER" COMPETITION - 1911



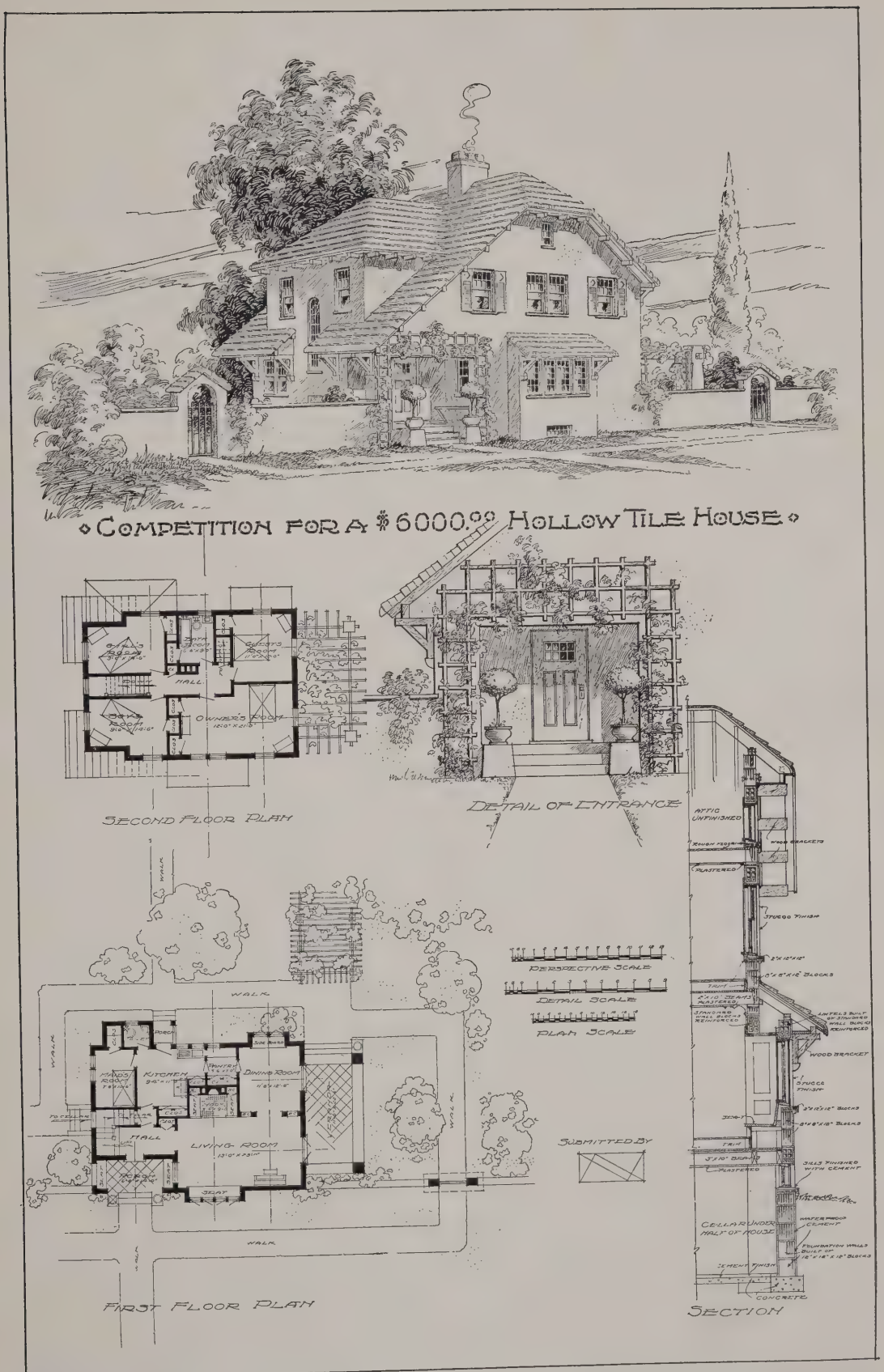
Design Submitted by Chalmers S. Clapp, 35 Downer Ave., Dorchester, Mass.



Design Submitted by Mink & Carson, 5 East 42d St., New York, N. Y.

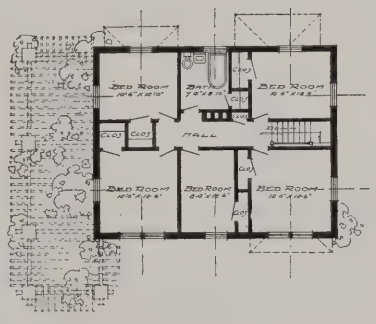


Design Submitted by W. S. Bessell, 19 Myer St., Hackensack, N. J.

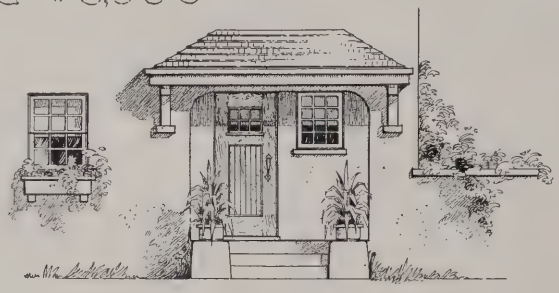


Design Submitted by Arthur Weindorf, 105 East Ave., Long Island City, N. Y.

◆ COMPETITION FOR A HOLLOW TILE HOUSE ◆
COSTING $6,000



SECOND FLOOR PLAN



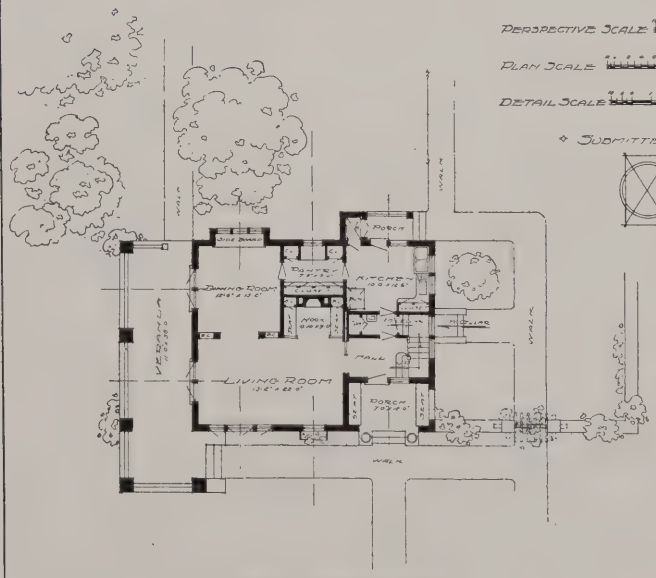
DETAIL OF ENTRANCE

PERSPECTIVE SCALE

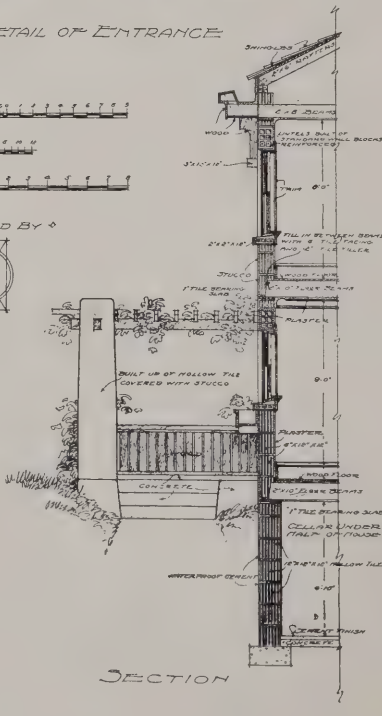
PLAN SCALE

DETAIL SCALE

◆ SUBMITTED BY ◆



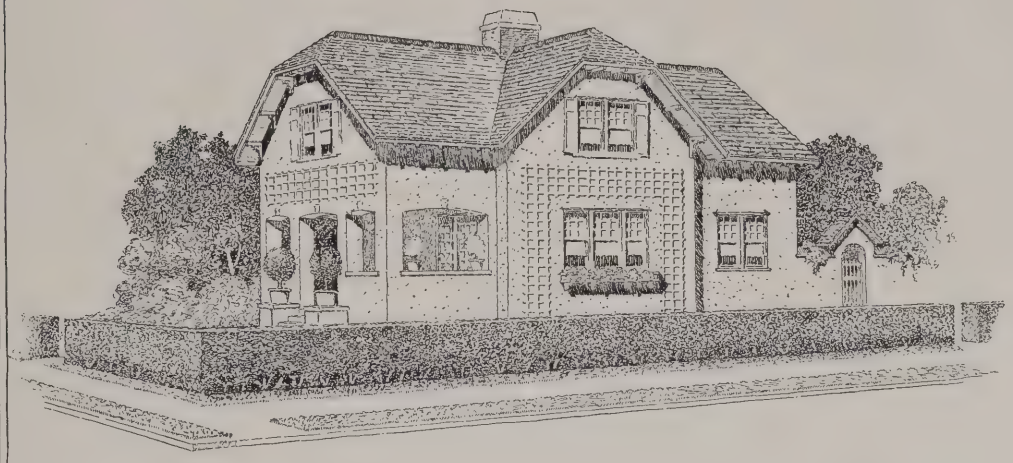
FIRST FLOOR PLAN

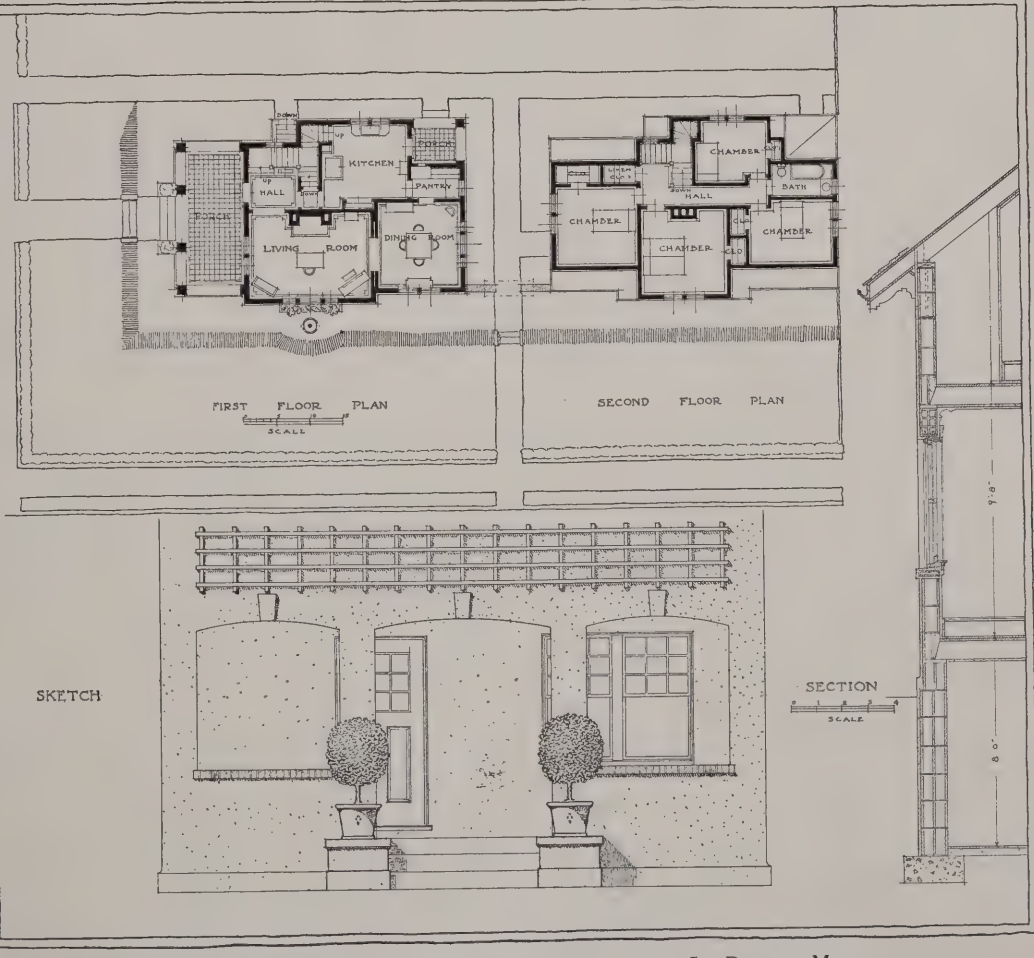


SECTION

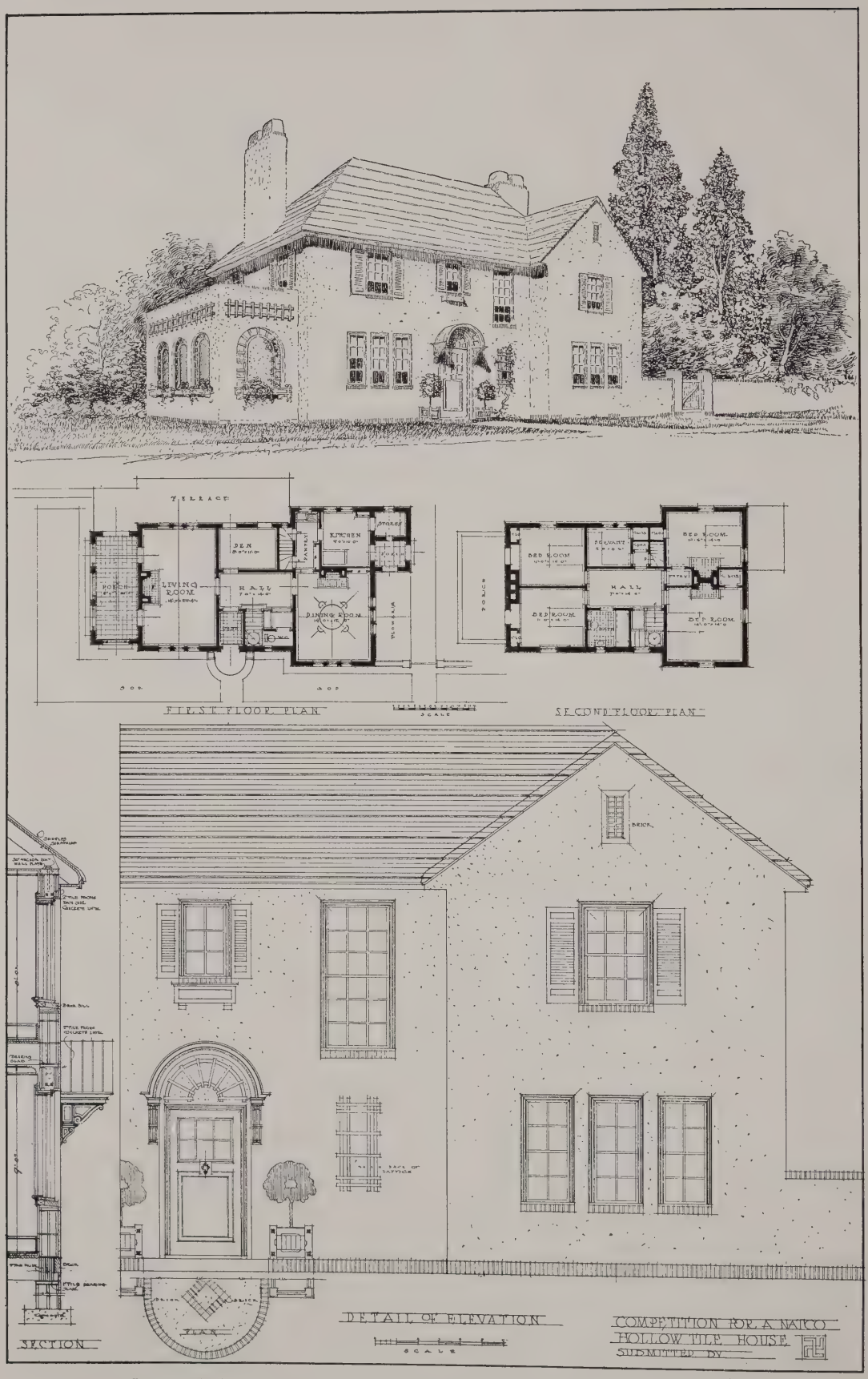
Design Submitted by Arthur Weindorf, 105 East Ave., Long Island City, N. Y.

BRICKBUILDER COMPETITION

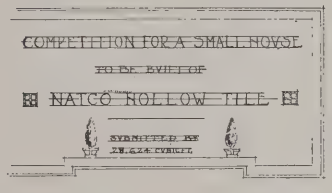


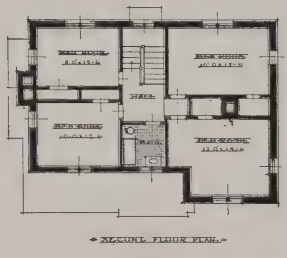


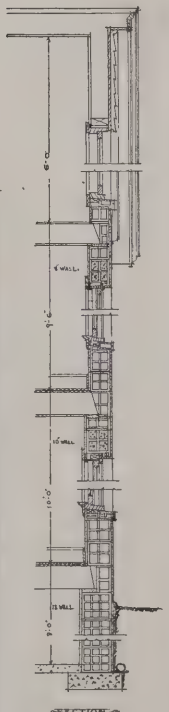
Design Submitted by William J. Dolan, 8 Beacon St., Boston, Mass.

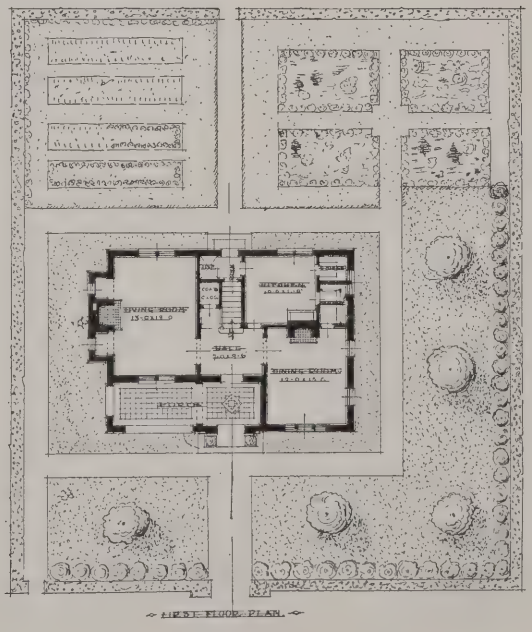


Design Submitted by Louis R. Moss, 512 Campbell Ave., Roanoke, Va.

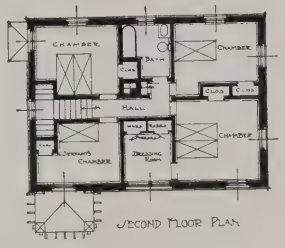








Design Submitted by Robert L. Stevenson, 346 Fourth Ave., New York, N. Y.



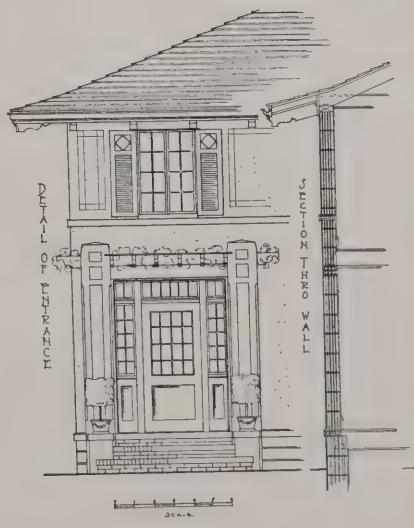
SECOND FLOOR PLAN

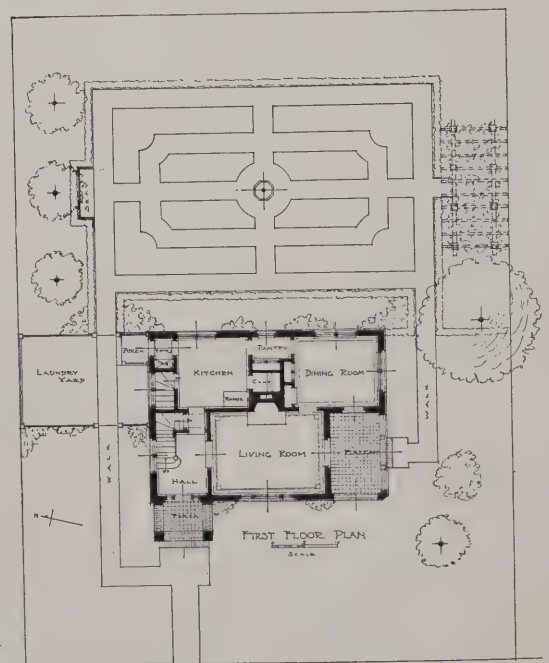
COMPETITION FOR A SMALL HOUSE TO BE BUILT OF NATCO HOLLOW TILE

COST OF HOUSE $6000 DOLLARS

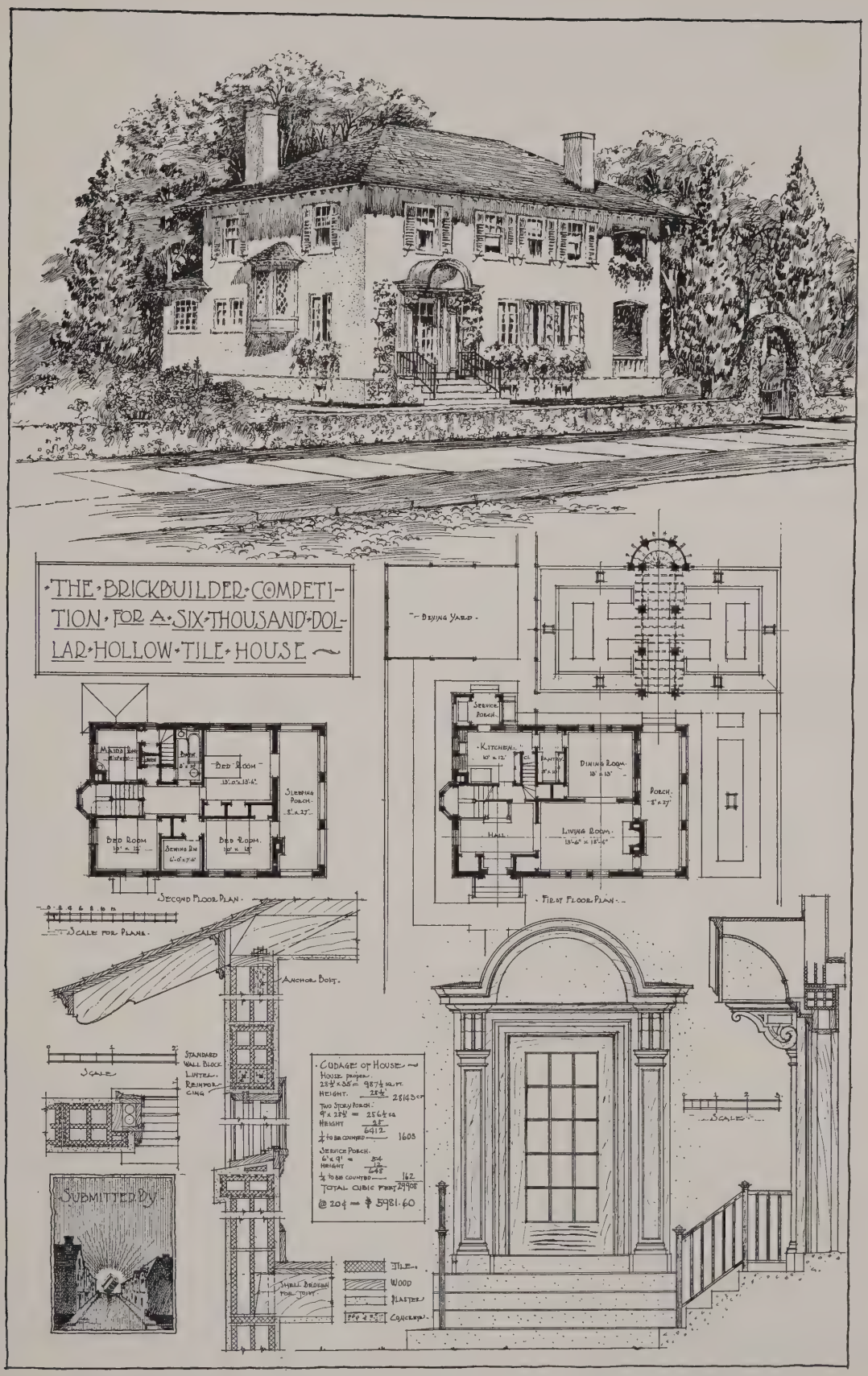
CUBIC CONTENTS 29178 FEET

SUBMITTED BY MUTT & JEFF --

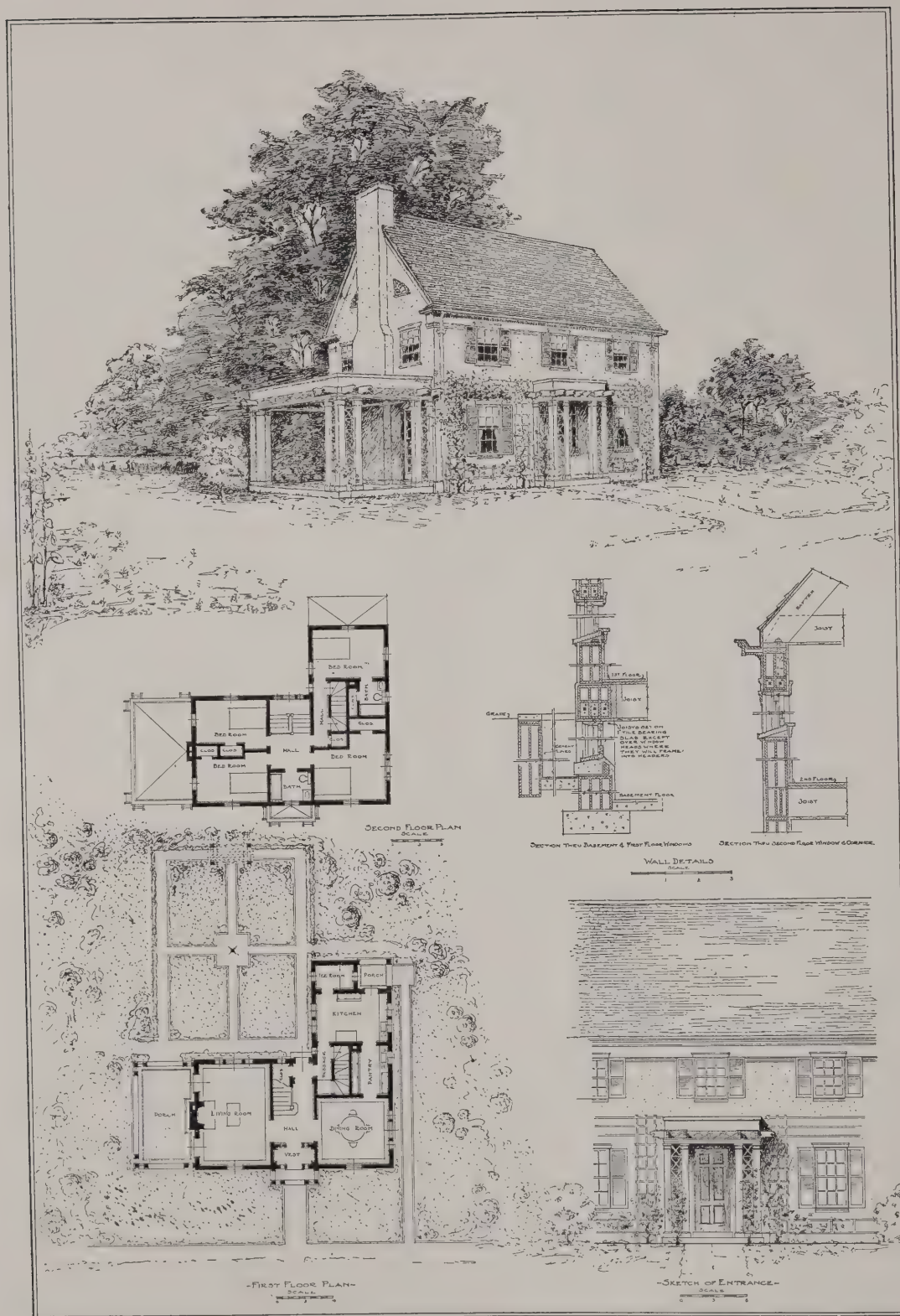




Design Submitted by Geo. Nelson Meserve and Geo. Ernest Robinson,
101 Tremont St., Boston, Mass.



Design Submitted by Robert W. Maust, 389 N. Grove St., East Orange, N. J.

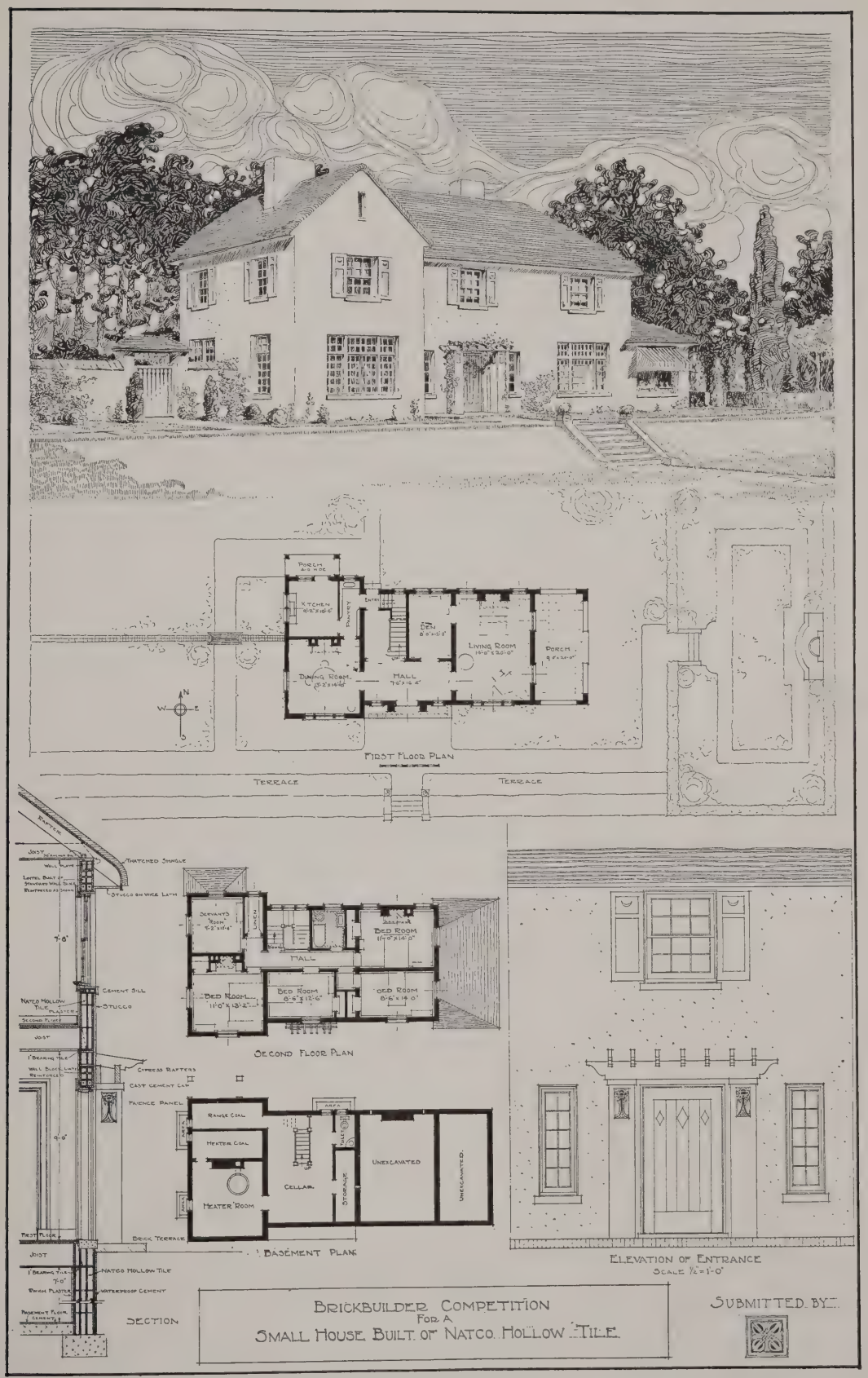


JUNE 26 1911

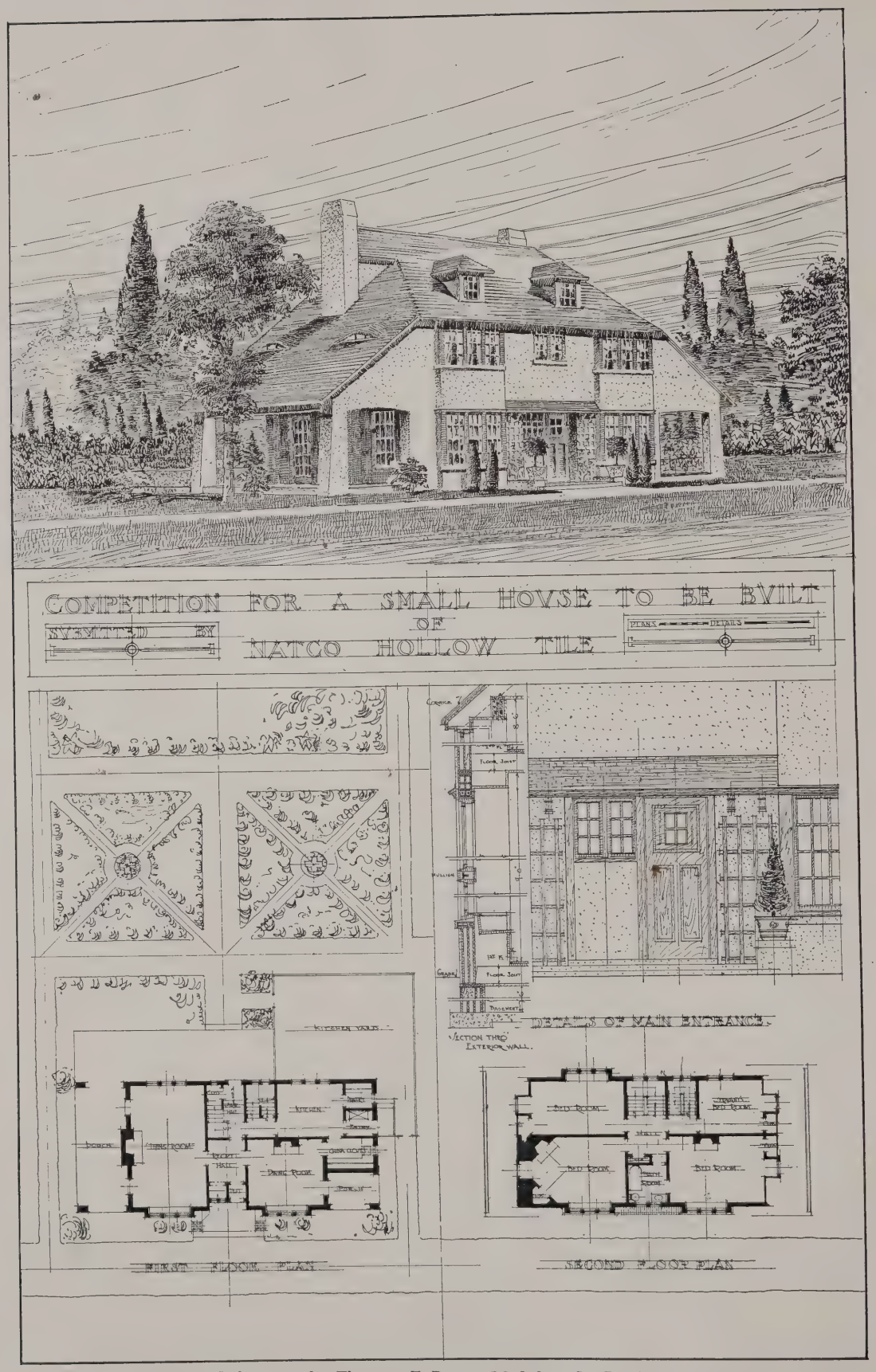
COMPOTITION FOR A SMALL TILE HOUSE TO COST SIX THOUSAND DOLLARS

SUBMITTED BY

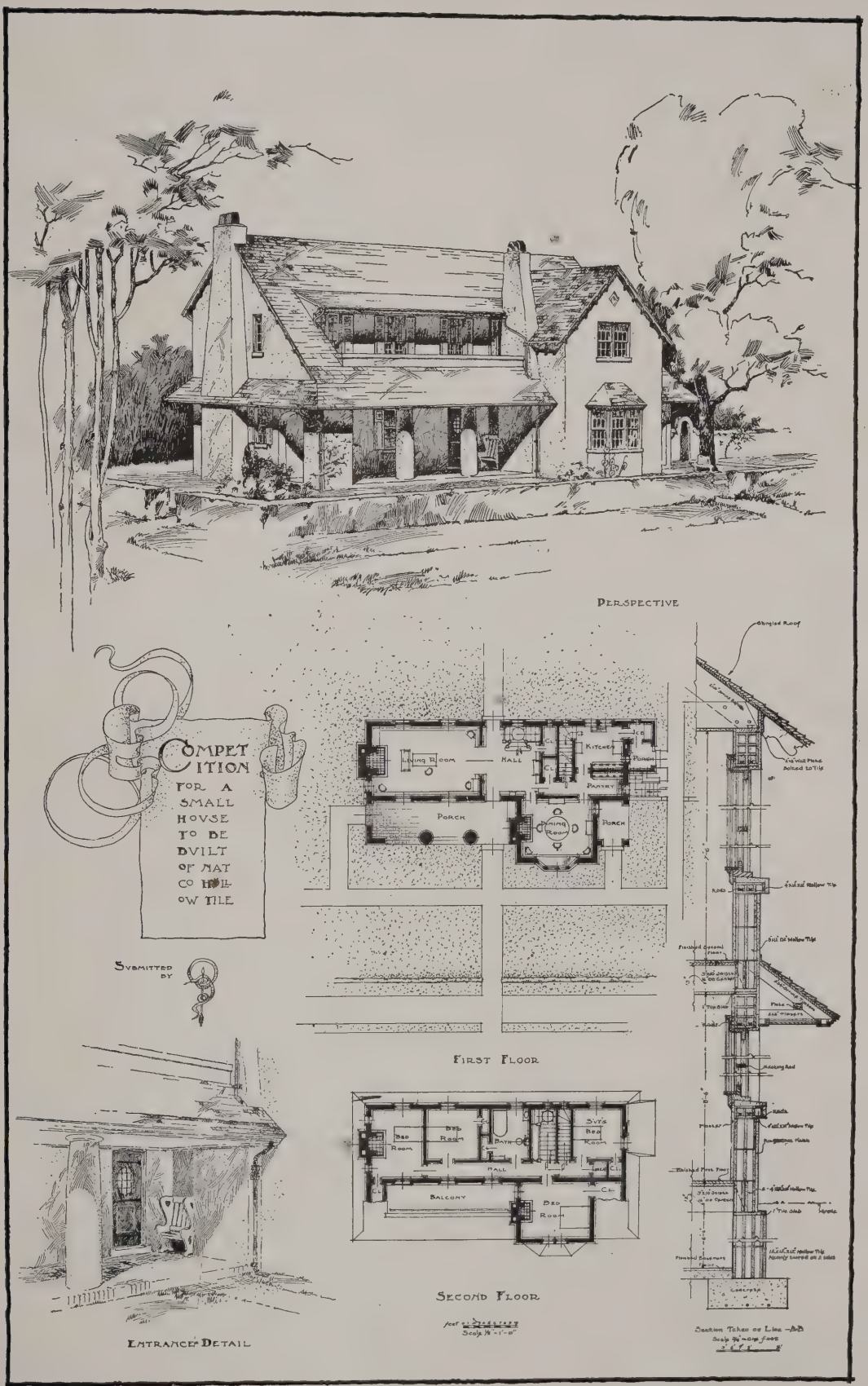
Design Submitted by Geo. Rodney Harris, 927 E. 105th St., Cleveland, Ohio.



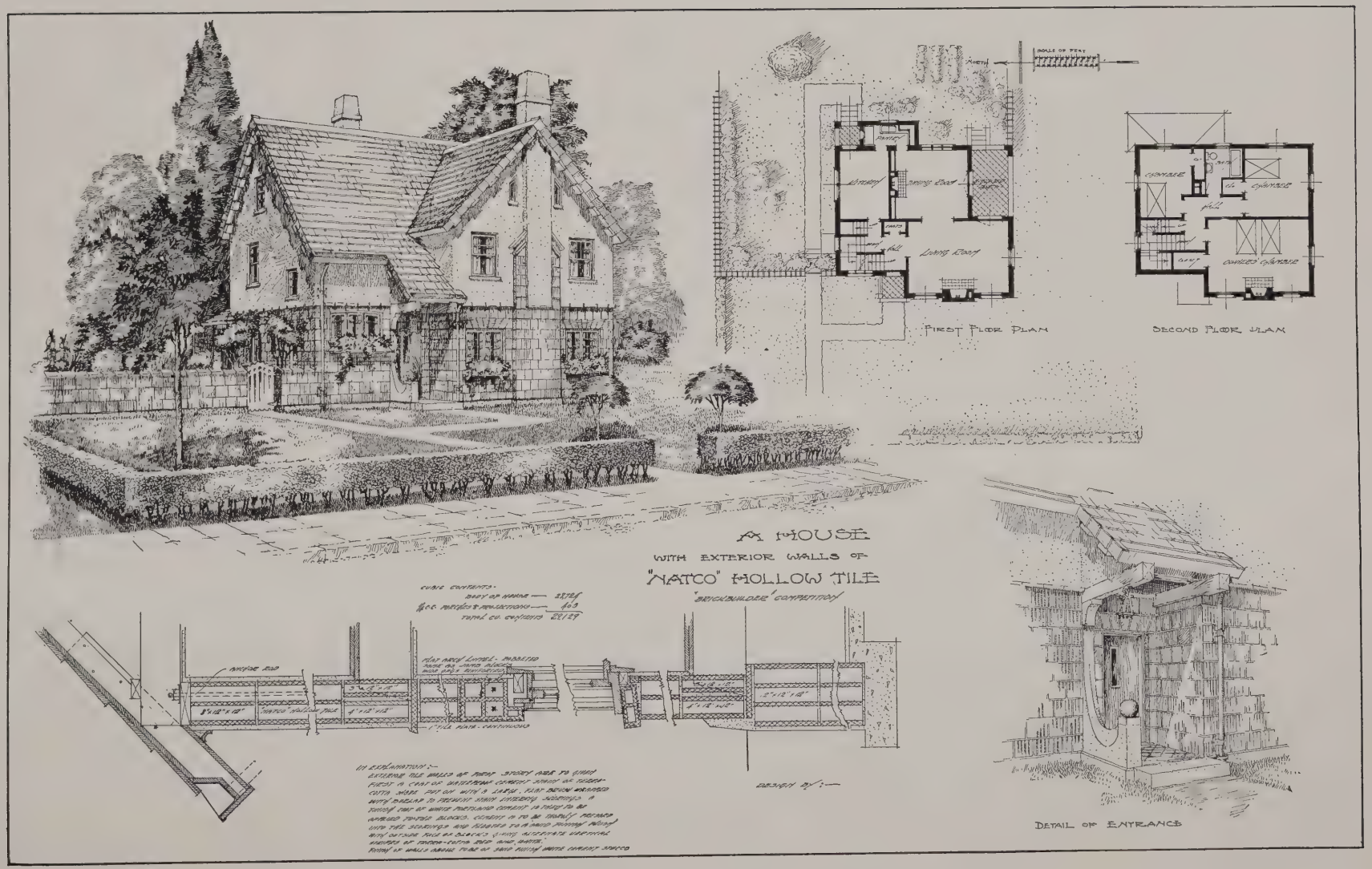
Design Submitted by J. M. Delbert and M. F. Maxwell, 1411 Harvard St., Washington, D. C.



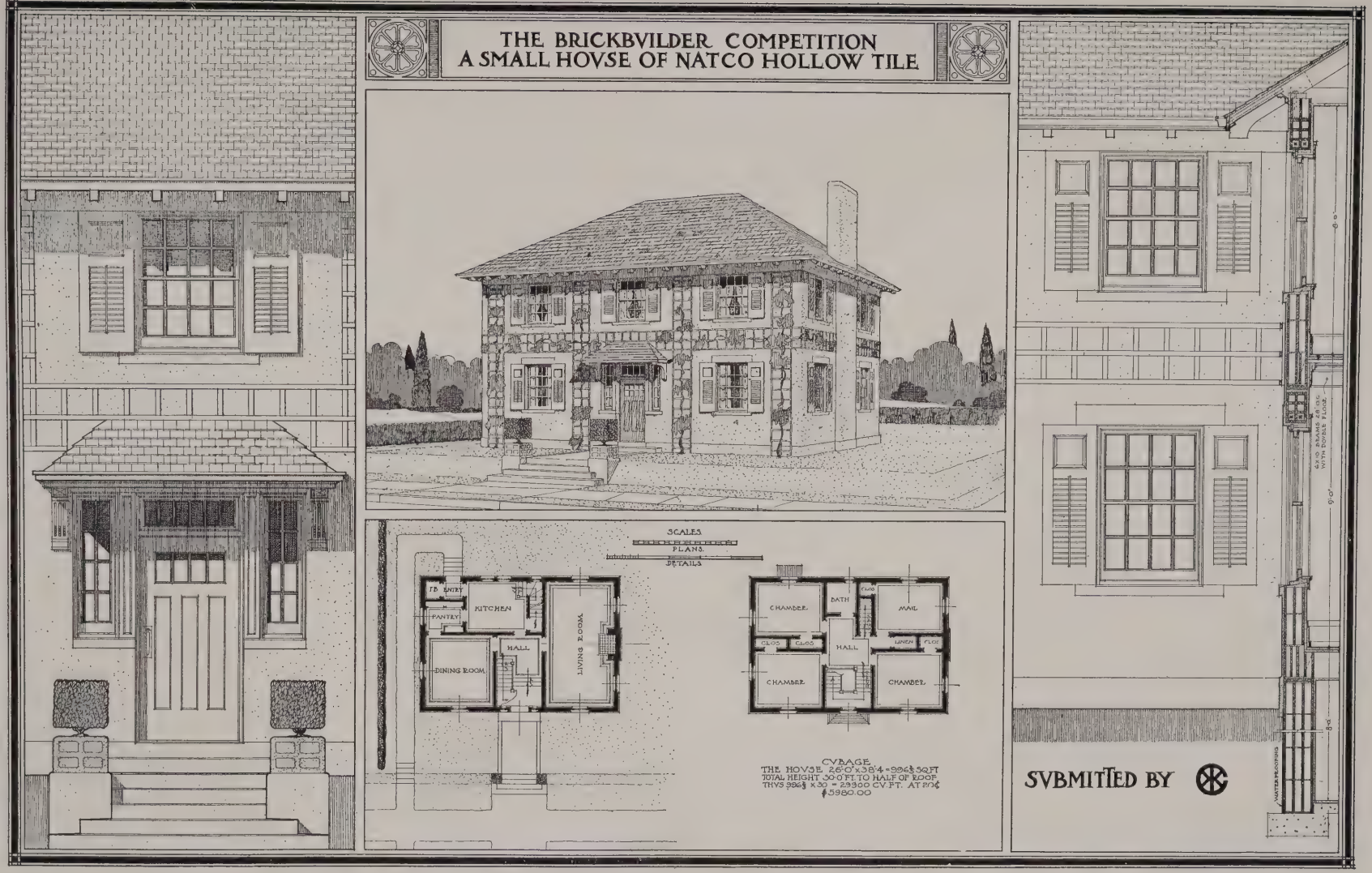
Design Submitted by Thomas F. Rowe, 30 Julian St., Roxbury, Mass.



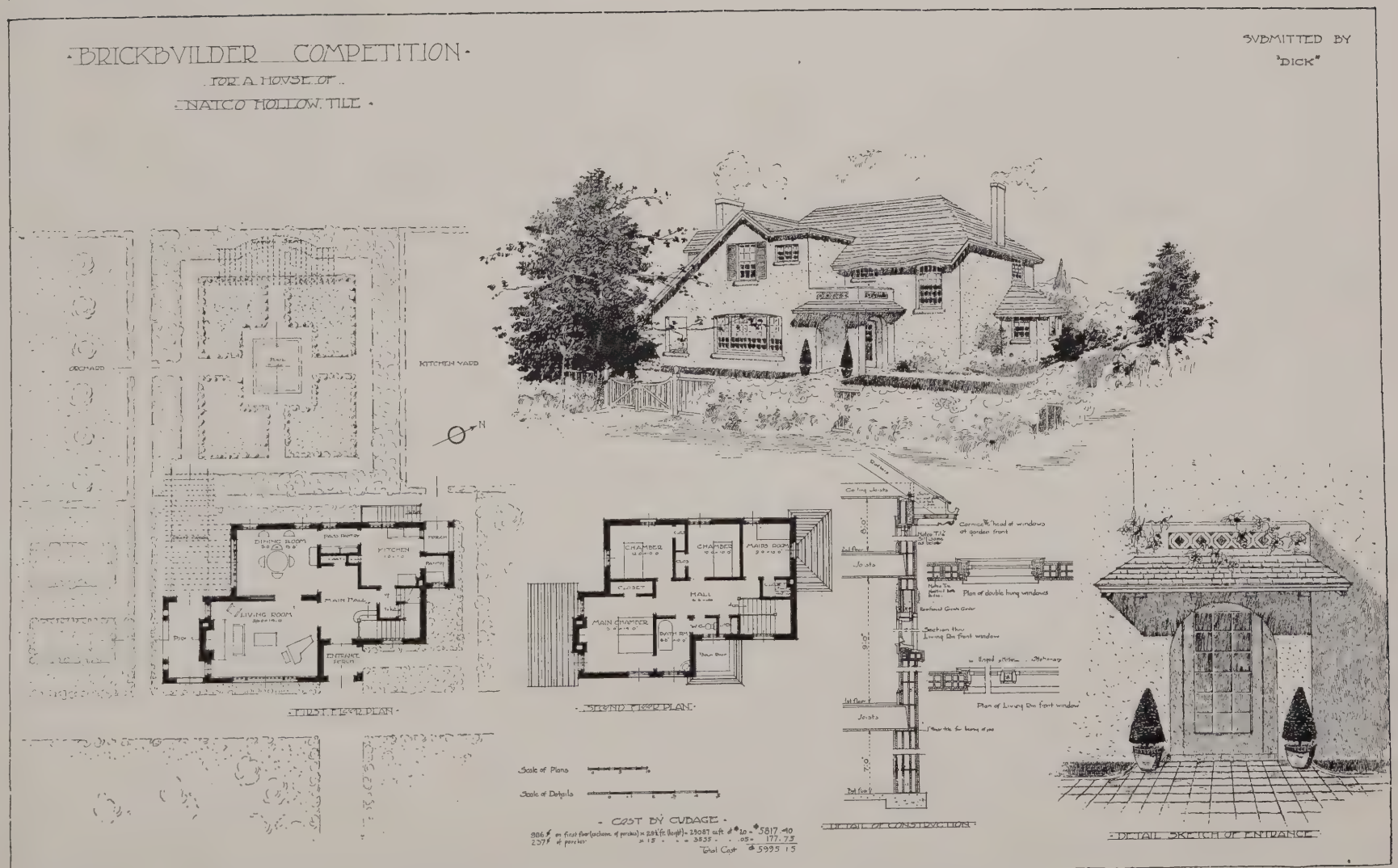
Design Submitted by Love & Brumbaugh, 3745 Walnut St., Philadelphia, Pa.



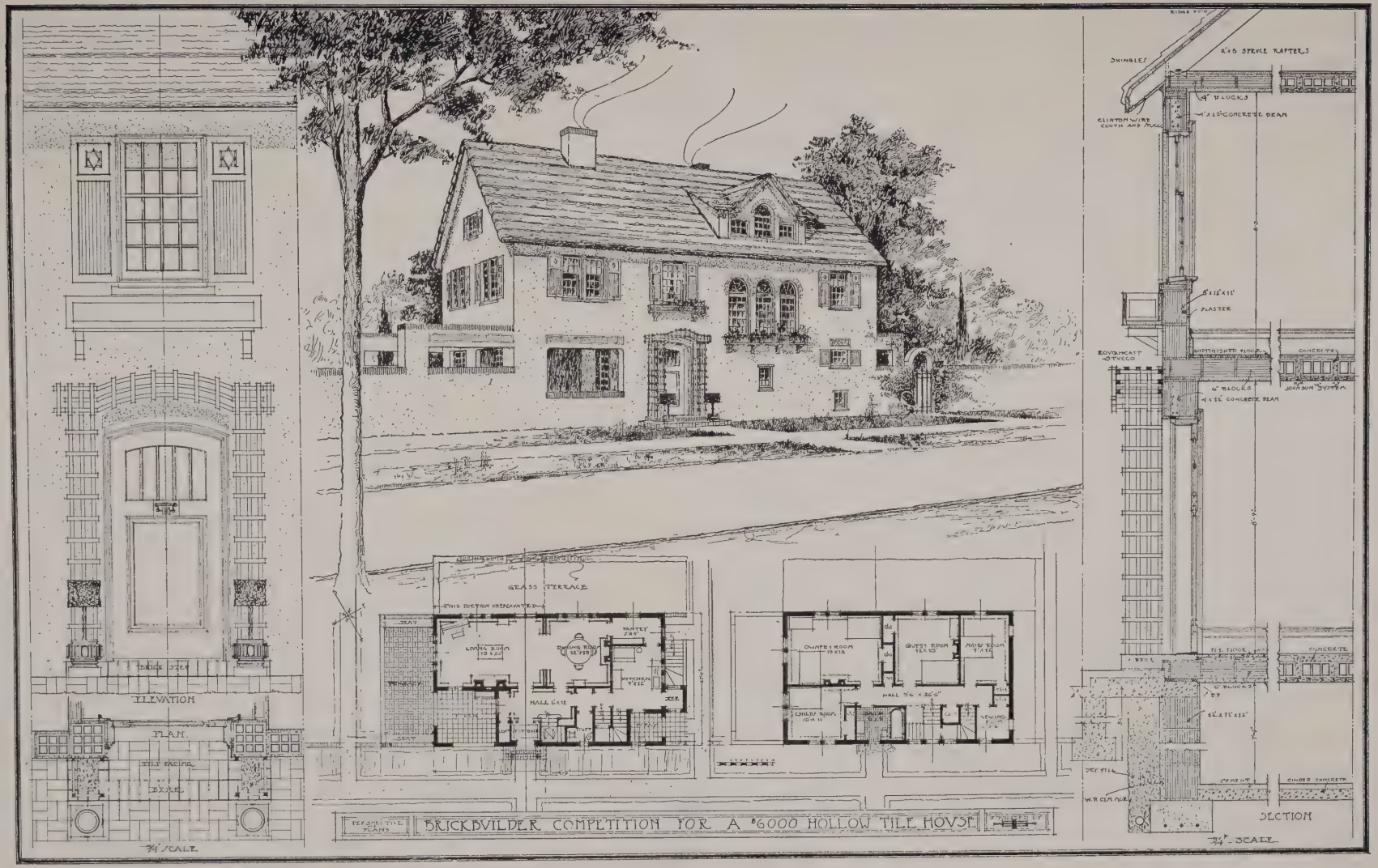
Design Submitted by Charles H. Beckel, Andrus Building, Minneapolis, Minn.



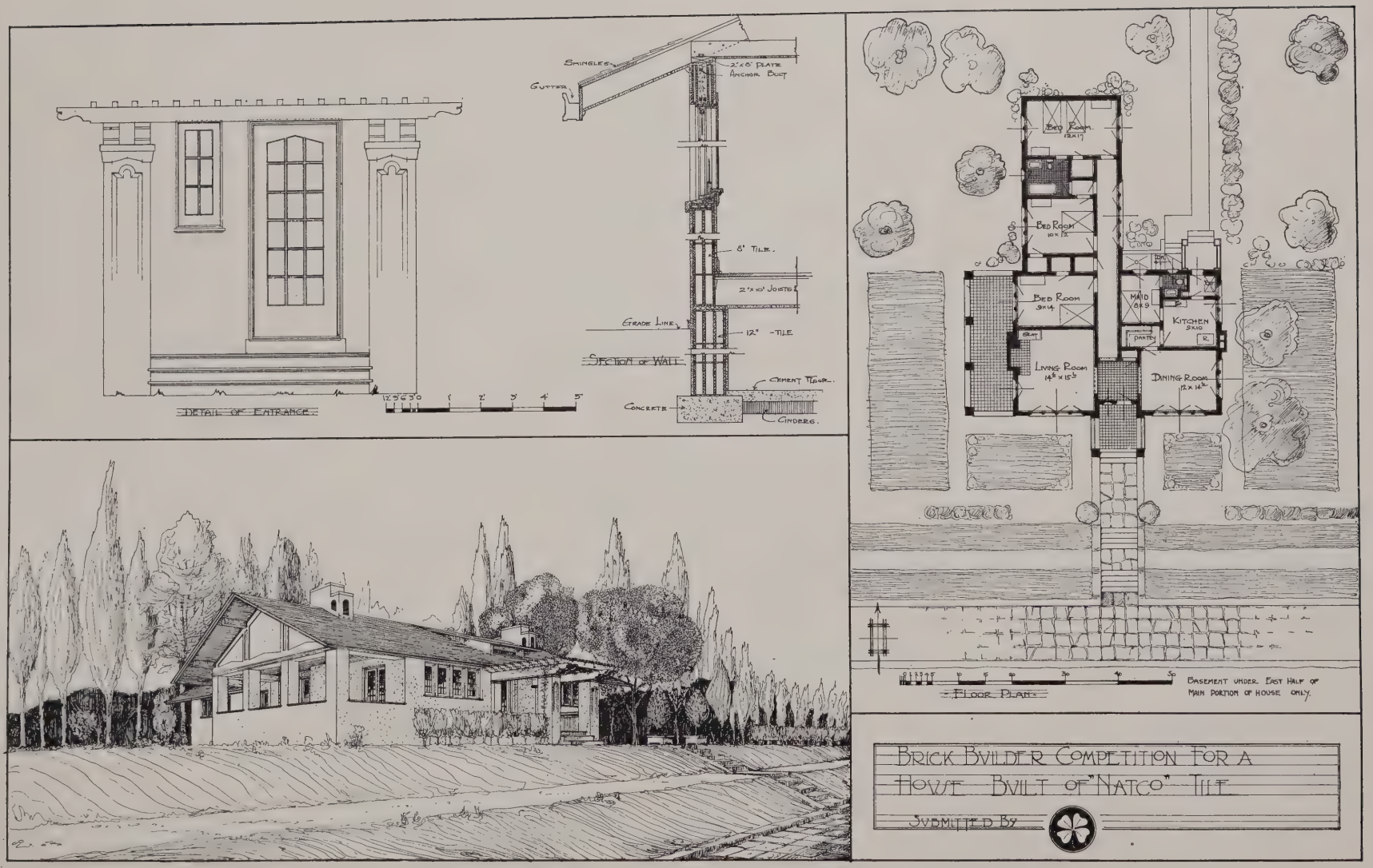
Design Submitted by William Kenneth Clark, 46 Church St., New Rochelle, N. Y.



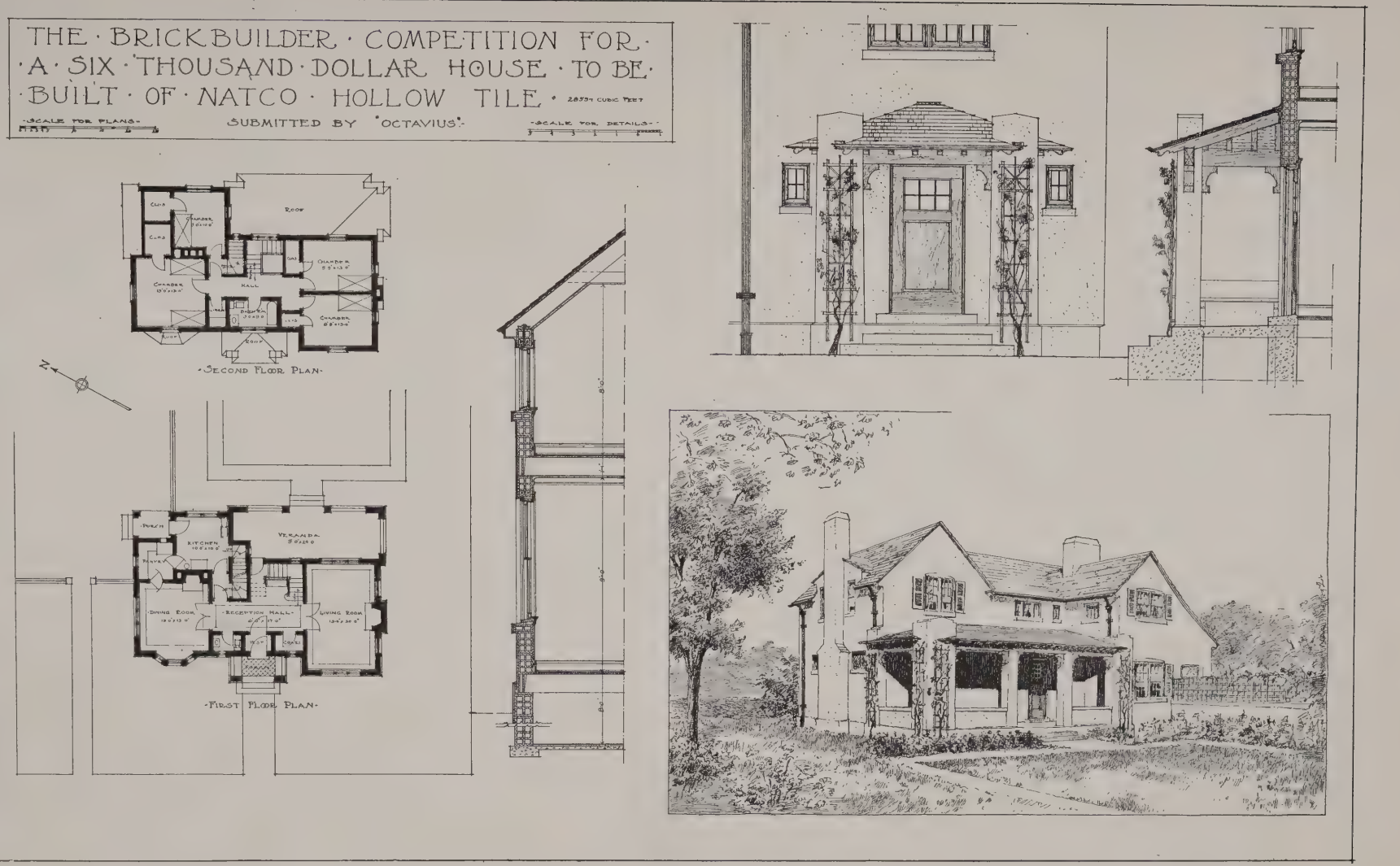
Design Submitted by Elmer Jerome Krafft, Phelan Building, San Francisco, Cal.



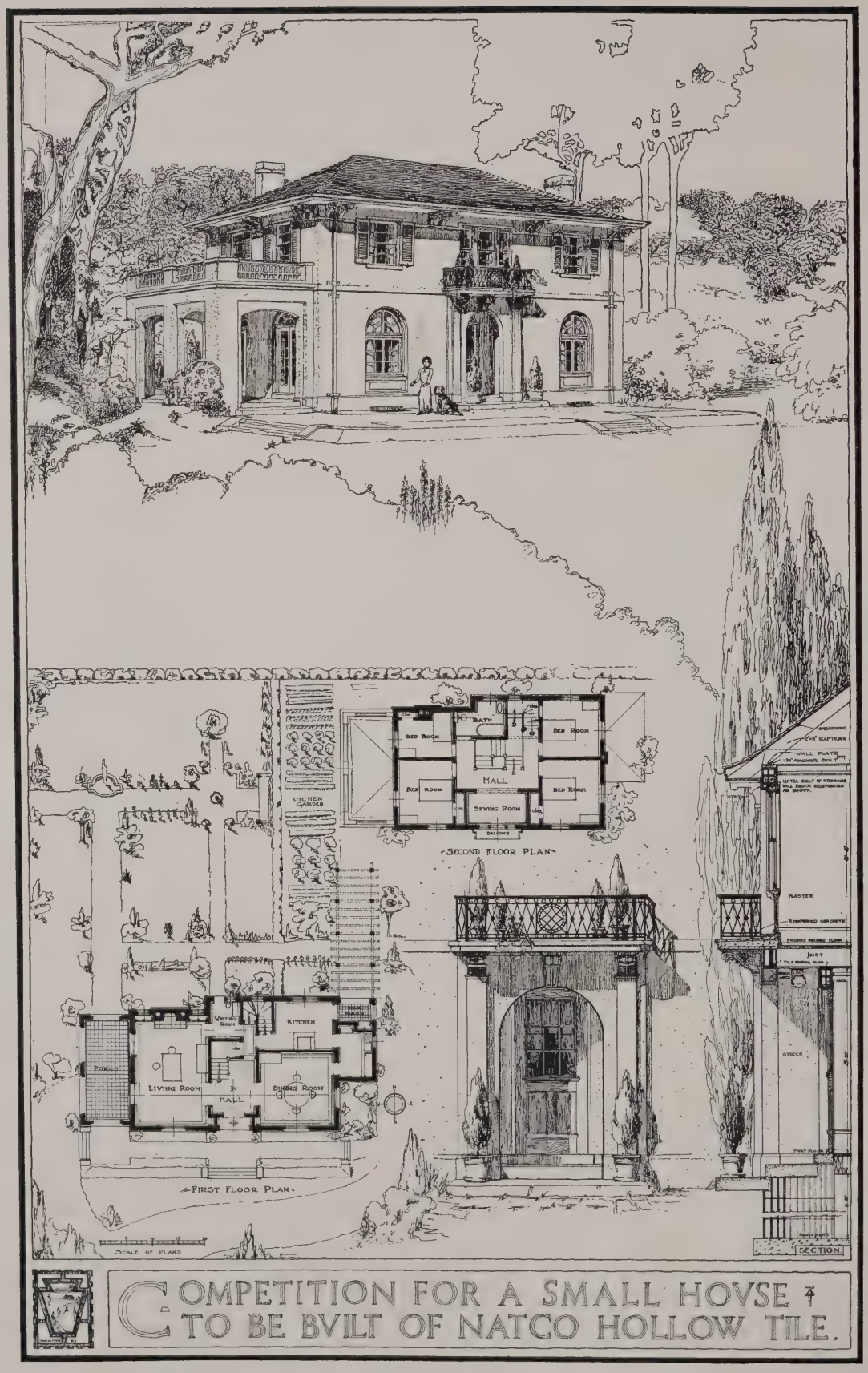
Design Submitted by V. W. Upham, Granite Building, Rochester, N. Y.



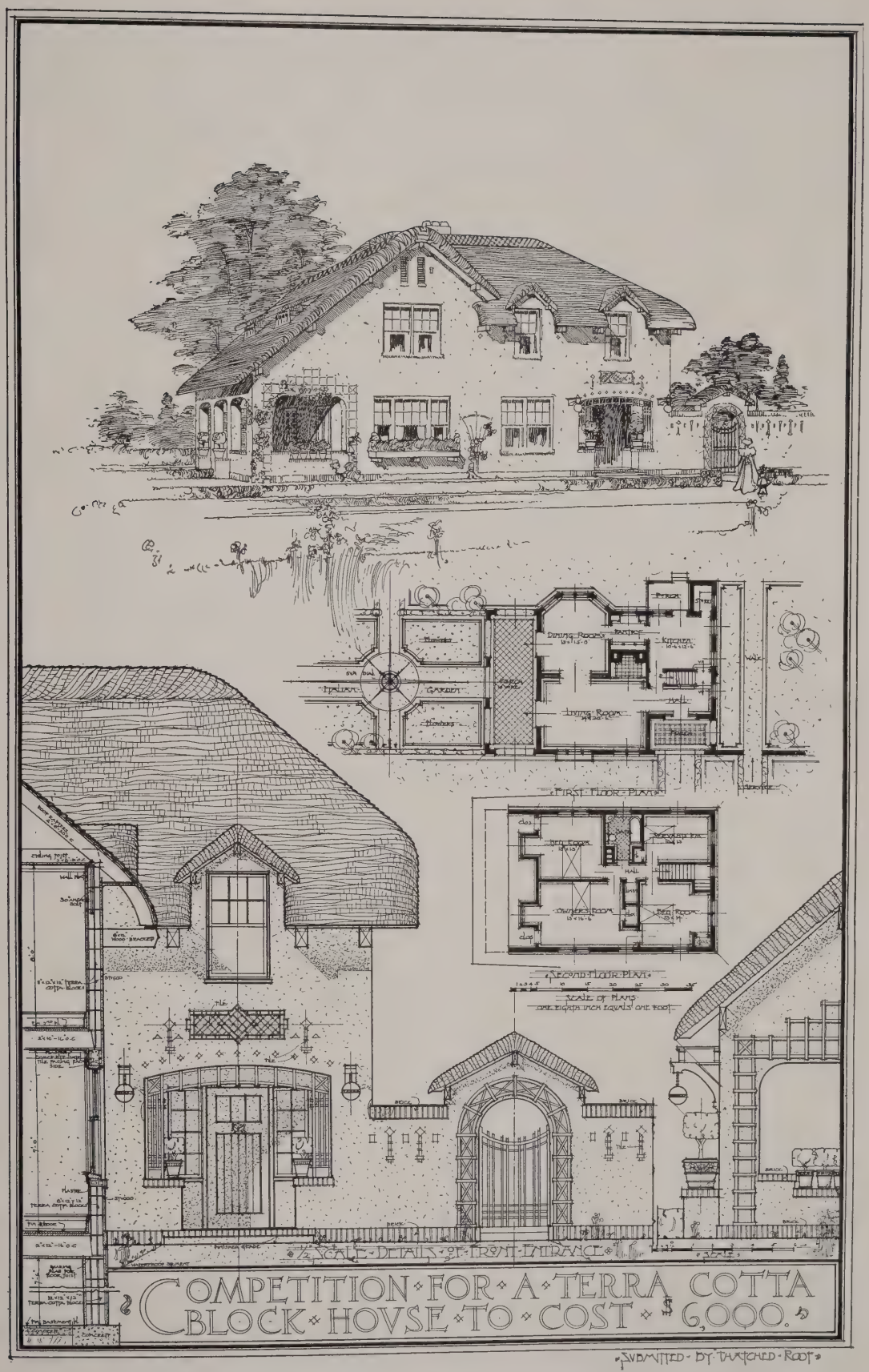
Design Submitted by M. McDonald Lovell, 4455 Woodlawn Ave., Chicago, Ill.


THE · BRICKBUILDER · COMPETITION FOR ·
· A · SIX · THOUSAND · DOLLAR HOUSE · TO BE ·
· BUILT · OF · NATCO · HOLLOW TILE · 28534 CUBIC FEET
SCALE FOR PLANS
SUBMITTED BY "OCTAVIUS"
SCALE FOR DETAILS
SECOND FLOOR PLAN
FIRST FLOOR PLAN
PORCH
KITCHEN
VERANDA
DINING ROOM
RECEPTION HALL
LIVING ROOM

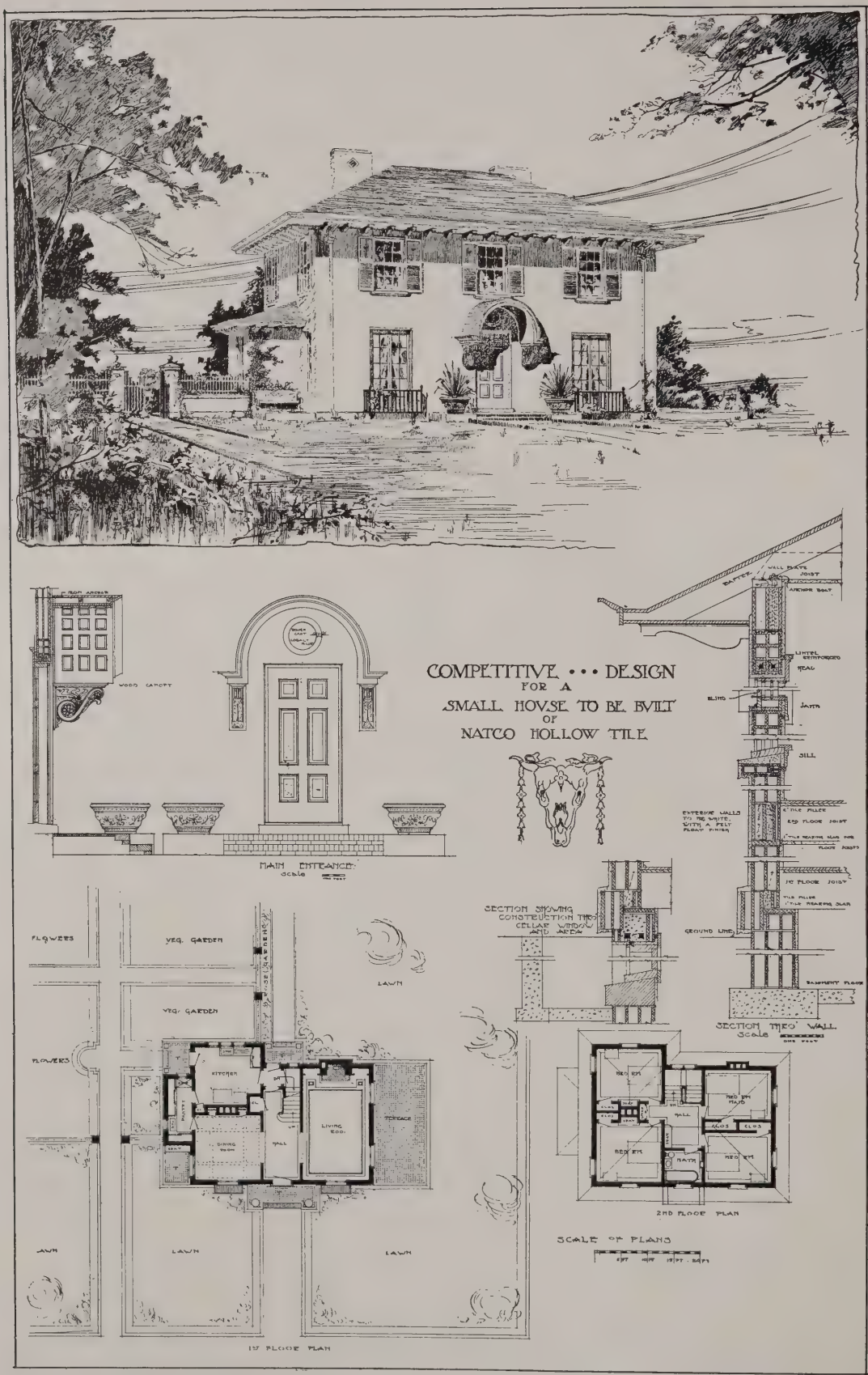
Design Submitted by Oliver M. Wiard, New Britain, Conn.



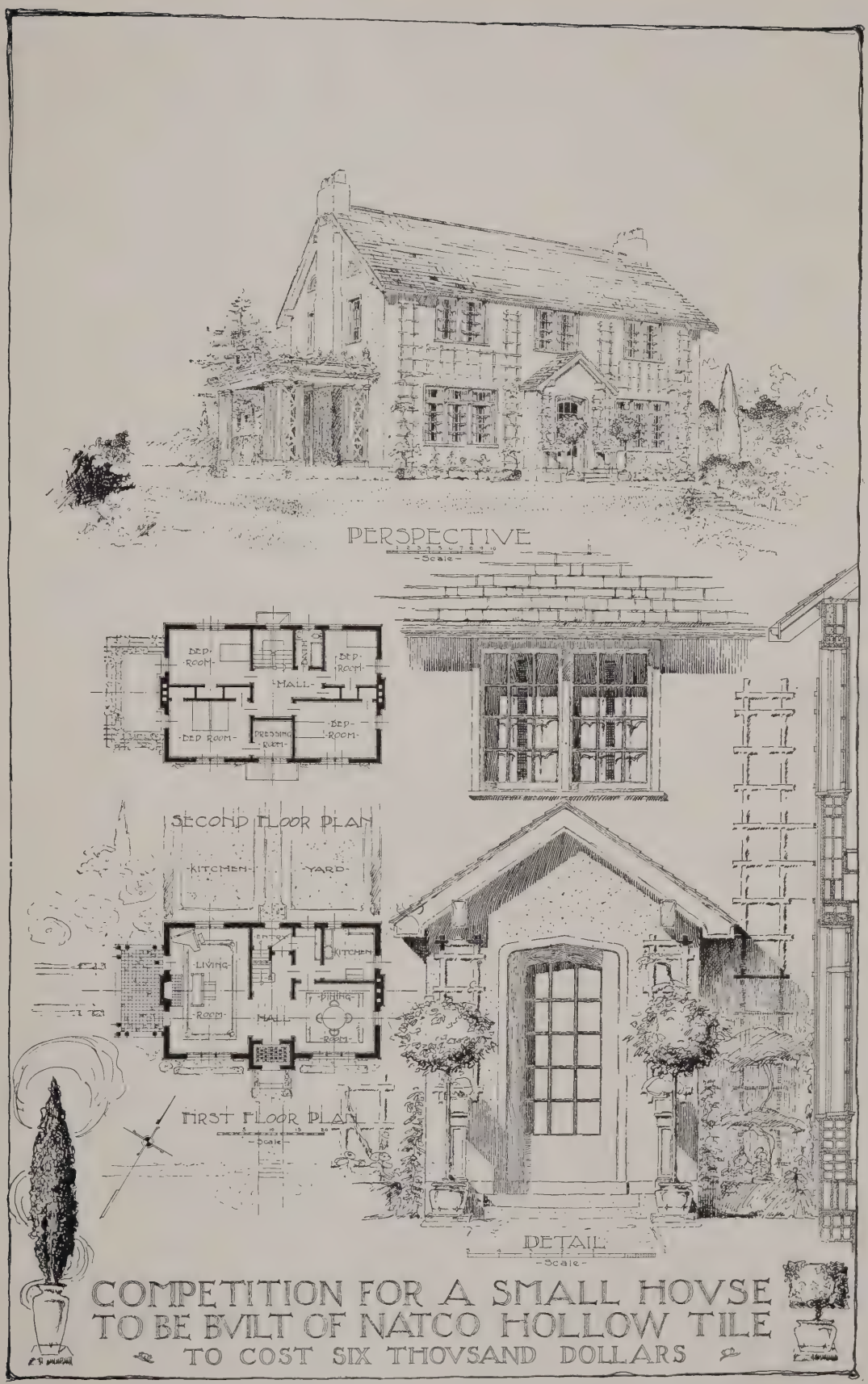
Design Submitted by Charles H. North, Glenolden, Del. Co., Pa.


COMPETITION · FOR · A · TERRA COTTA
BLOCK · HOUSE · TO · COST · $ 6,000.
SCALE · DETAILS · OF · FRONT · ENTRANCE
FIRST · FLOOR · PLAN
SECOND · FLOOR · PLAN
SCALE OF PLANS
ONE EIGHTH INCH EQUALS ONE FOOT
SUBMITTED · BY · THATCHED · ROOF

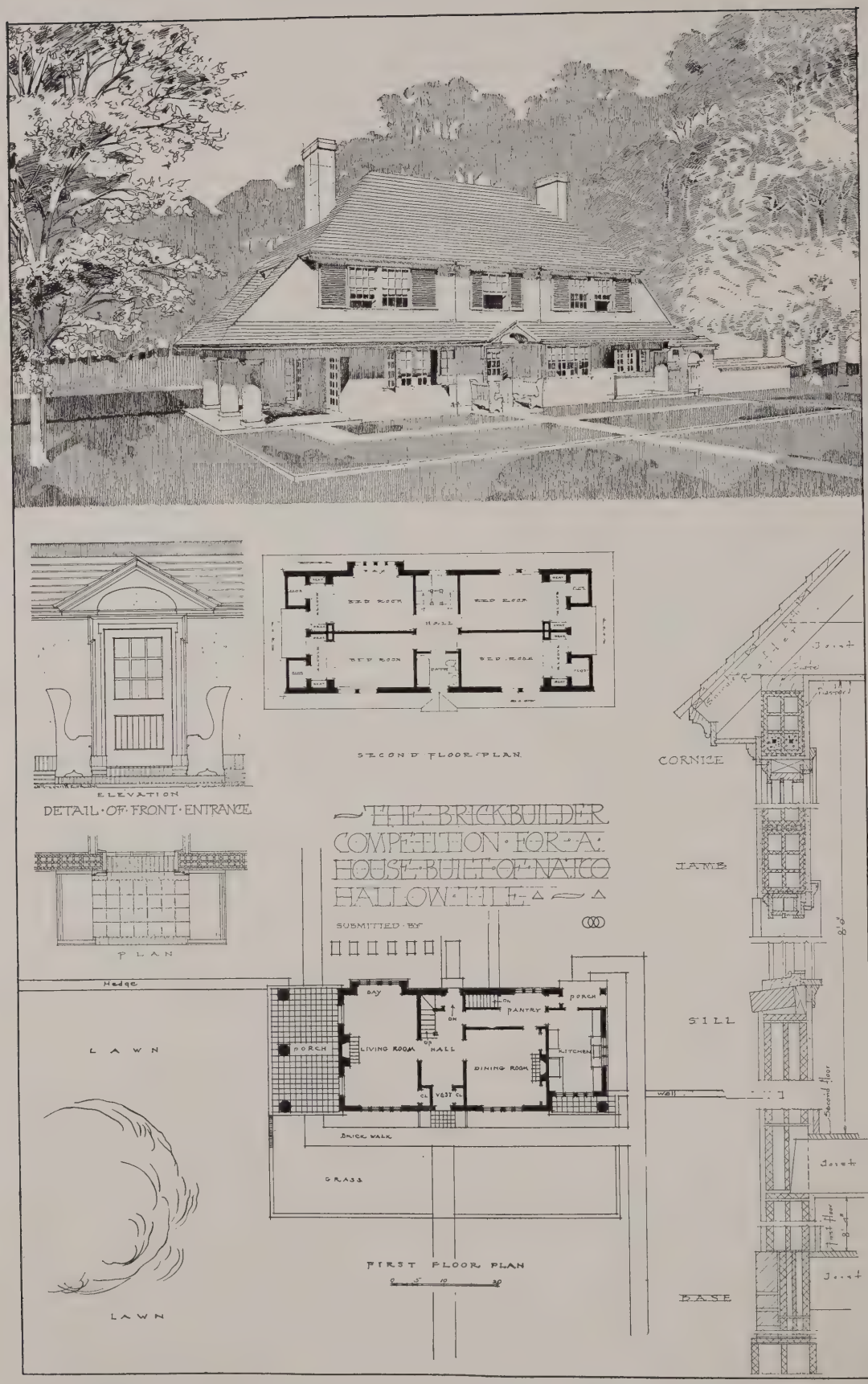
Design Submitted by Clifford Evans, Empire Building, Birmingham, Ala.



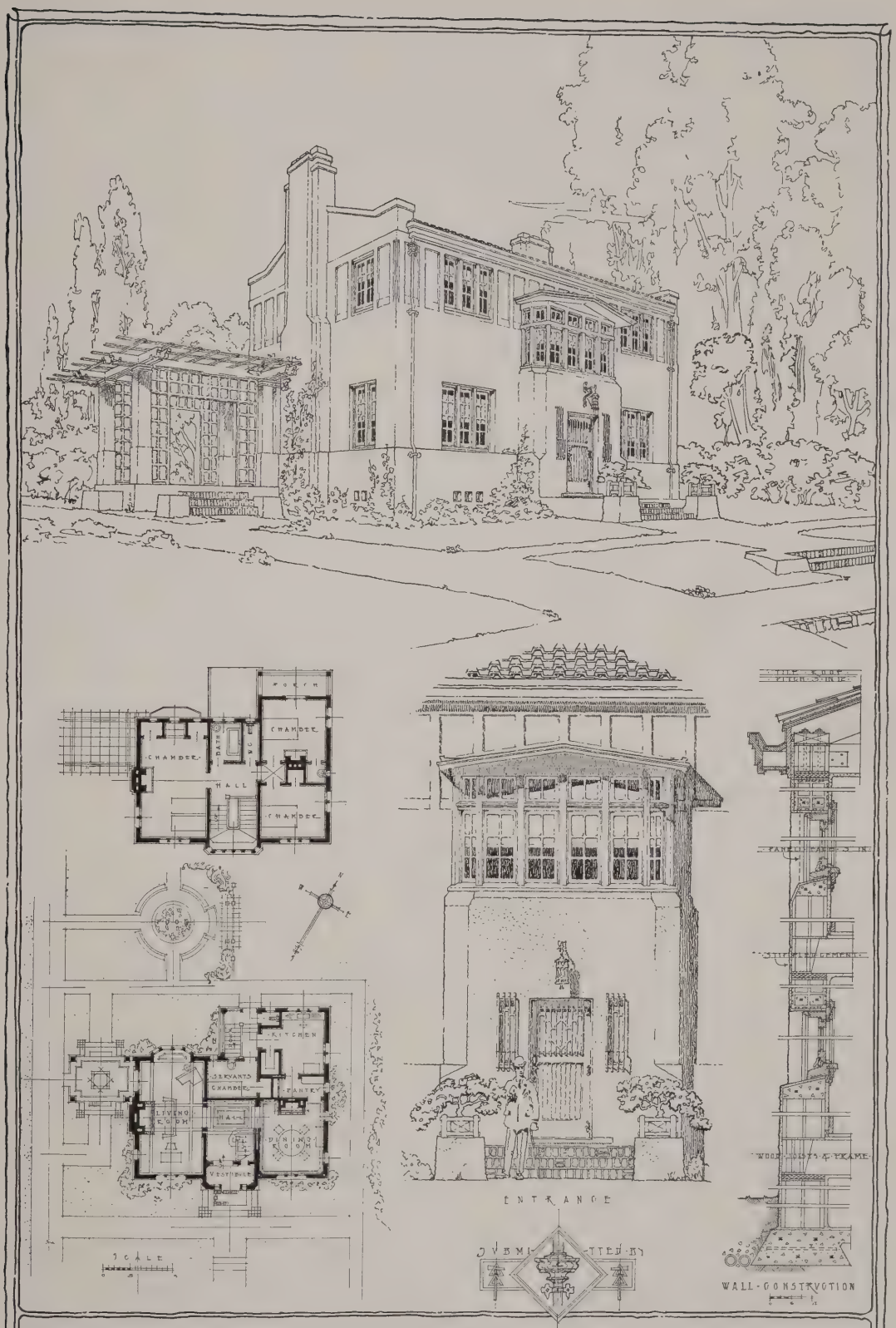
Design Submitted by Charles H. Umbrecht, 214 Prospect Ave., Syracuse, N. Y.



Design Submitted by Lester E. Varian, Colburn Building, Denver, Colo.

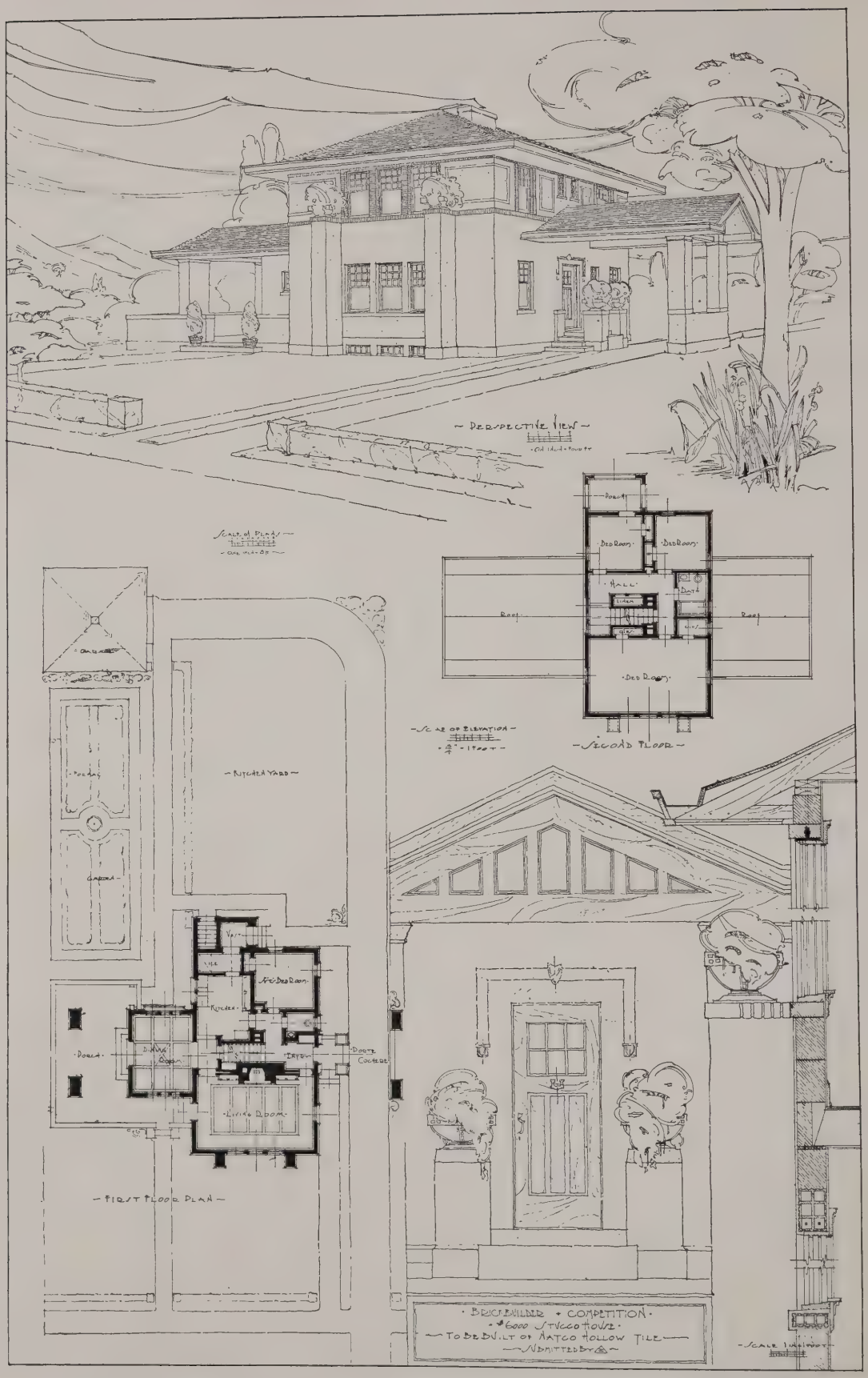


Design Submitted by Robert A. Taylor, 329 Richey Ave., West Collingswood, N. J.



THE BRICKBUILDER COMPETITION FOR A SMALL DETACHED DWELLING OF NATCO HOLLOW TILE

Design Submitted by Walter B. Phillips, 2823 Forest Ave., Berkeley, Cal.



Design Submitted by Archie H. Hubbard, First National Bank Building, Champaign, Ill.

A Series of attractive houses which have been built of Natco Hollow Tile. The examples here presented are the work of a group of well-known architects.

A Natco Tile House at Glencoe, Illinois

(Illustrated page 47)

BY ROBERT C. SPENCER, JR., ARCHITECT

ONE of the professors of the University of Chicago is quoted in the daily press as saying in effect that "mature women of education" do not like red.

If this be a fact, it may account in part for the present vogue of the so-called "stucco finished house," with its delicate gray, cream, or pale smoke-brown walls.

But whatever the reason, the stucco finished house has grown popular everywhere for suburb and country, and many owners want them to be as fire-resisting as they look.

For economy in first cost, however, the great majority of stucco houses are wooden shells enveloped in a skin of cement stucco on either wood or metal lath.

In the case of the Glencoe house, as in the case of several others, we wished to learn, at least approximately, the comparative cost of building in frame and stucco, and hollow terra cotta blocks and stucco, based on substantially the same floor plans and elevations, and the same specifications as to interior finish, plumbing, heating, and other equipment.

It is true, the owner much preferred a hollow tile walled house, a fire-resisting house, but he was pleased nevertheless at our offer to prepare practically two sets of working drawings — one for each type of wall and partition construction — for our own information and without an additional fee, giving him the benefit of two sets of comparative, competitive bids, and a chance to proceed at once with the building of a frame house, should the cost of one of tile prove too high.

On the lowest original bids, the total cost of the house (exclusive of garage) per cubic foot would have been in tile and stucco with shingle roof 26 cents, in frame and stucco with shingle roof 23 cents. The building actually cost in tile 26.6 cents, with the interior trim, etc., except in attic and service parts changed from the customary carpenter's job to "cabinet finish," and all roof surfaces covered with red shingle tile, instead of shingles.

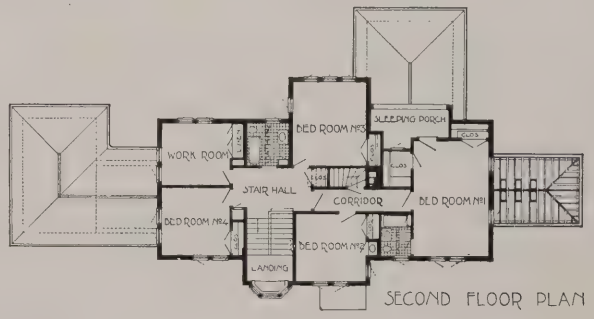
The plan differs from that of the average suburban house of the better class in several important features: servant's bedroom on the ground floor instead of in the attic, with a toilet room conveniently located adjacent to it; the small garage connected with the house by a roof forming a porte cochère

FIRST FLOOR PLAN

HOUSE AT GLENCOE, ILL.

Walls of Natco hollow tile with stucco finish.

Spencer & Powers, Architects, Steinway Hall, Chicago.



SECOND FLOOR PLAN

entrance, and the roomy conservatory built and equipped like a greenhouse, off the living room, are the most important ones.

In constructing this house not only were the exterior walls above the water table built of hollow tile, but the interior partitions and foundation walls as well were built of the same material; the former being eight inches in thickness and the latter ten inches.

One chimney suffices for all purposes, a vent only being provided for the gas range. The walls of this chimney are also built of hollow tile enclosing the usual terra cotta flue linings.

Particular care was taken to thoroughly soak the exterior wall tiles with water from a hose before applying the first coat of cement mortar. Two additional coats were applied later, the last being fine, rough cast "Stonkote" water-proof stucco in a beautiful, delicate cream color. Both the first and second coats of cement mortar were lightly scratched and very thoroughly soaked before the application of the succeeding coat.

Samples of tile coated as above showed when broken that it was practically impossible to secure any cleavage between the cement and the tile, breaks always occurring cross-wise or diagonally, leaving cement adhering to tile or pieces of tile adhering to cement.

While no attempt was made here to build a strictly fireproof house, there is no question but that it would prove highly fire-resisting against any accidental combustion which could possibly arise within it.

The interior walls are not furred, plastering being applied directly to the tile, avoiding hidden passages for flames from floor to floor. The saving in plastering directly on the tile instead of on metal lath over furring was no doubt a very considerable item.

All window sills are of 6″ x 9″ red "promenade" tile, and porch and terrace pavements, treads of entrance steps, and copings of terrace walls are of quarry tile; the latter being 12″ x 12″, and slightly overhanging the walls they cover. This material makes an excellent substitute for stone and cement, seems likely to prove more durable than the latter, and is neat and pleasing in appearance.

In roughing in the pipe and wire conduits not a little cutting of tile walls, both exterior and interior, was involved. Wherever such cutting was done, the voids were filled solid with strong cement mortar, completely embedding the pipes. Pipes carrying water in outside walls were heavily insulated before being cemented in. It might appear that there would be risk of water freezing in these pipes, but as the house has already passed through one exceptionally severe winter without damage from this source, it is safe to assume that it will do so indefinitely.

A Natco Tile House at Ravinia, Illinois

(Illustrated page 51)

BY LAWRENCE BUCK, ARCHITECT

THIS house, which I have built for my own home, is located in Ravinia, a suburb of Chicago, on a site over three acres in extent and having a frontage on two streets. The property extends to the center of a deep ravine. The house is placed about two hundred feet from the street and close to the bank of the ravine and so planned as to afford a beautiful view over the tree tops from every room in the house and especially from the screened porch which is connected by French doors with the living room and the principal bedroom.

The plan consists of a studio, a living room, two bedrooms and bath, kitchen, closets, etc., on the ground floor, and a servant's room and bath and guest room in the attic.

The basement extends only under the bedroom and kitchen end of the house (the living room and studio being built on the ground), and contains a boiler room, coal room, laundry, vegetable and toilet rooms.

The living room is divided by posts and beams into three parts, — a central space, and two alcoves, one for dining and one for use as a music room. The latter can be entered from the arched vestibule without passing through the living room proper. An upright piano and music cabinet placed between the posts separating this alcove from the living room, on the alcove side, and a couch back of these facing the fireplace, with a folding screen, gives sufficient privacy to the living room and dining alcove.

The two bedrooms and bath, which are to be used by the family, are connected by a corridor, a feature which insures perfect privacy.

The kitchen and stairs to servant's room in attic being separated by this corridor from the bedrooms makes it possible for the servant to attend to her duties without disturbing the occupants of the bedrooms.

The location of this entrance and stair hall also provide an entrance to the bedrooms and attic without passing through the living room. The door, being on the entry front of the building, does not suggest a back door.

The house is constructed of Natco Hollow Tile, all the walls and interior partitions being of this material, including basement walls. The living room floor is also of hollow tile 8 inches thick, laid on cinders, and over the tile a 4-inch concrete floor which is stained and oiled, raw linseed oil being applied from time to time until the concrete will absorb no more. This gives a very satisfactory surface, free from dust. The roof is of red tile

with copper flashings. The ceilings throughout the first floor are beamed with 4″ x 10″ yellow pine about 2 feet 6 inches centers; over them a common pine floor was laid, the underside of which shows in the ceiling of the first floor.

There is practically no trim. It was the intention to show the actual construction and to depend upon that for the artistic effect of the house. The windows are all casements opening out, set in rabbeted frames which show both inside and out, without any finish in the form of "trim."

The doors are hung with heavy iron strap hinges and fastened with old-fashioned iron latches. No knobs or locks were used on inside doors. Yale locks were used for outside doors only.

VIEW OF INTERIOR.

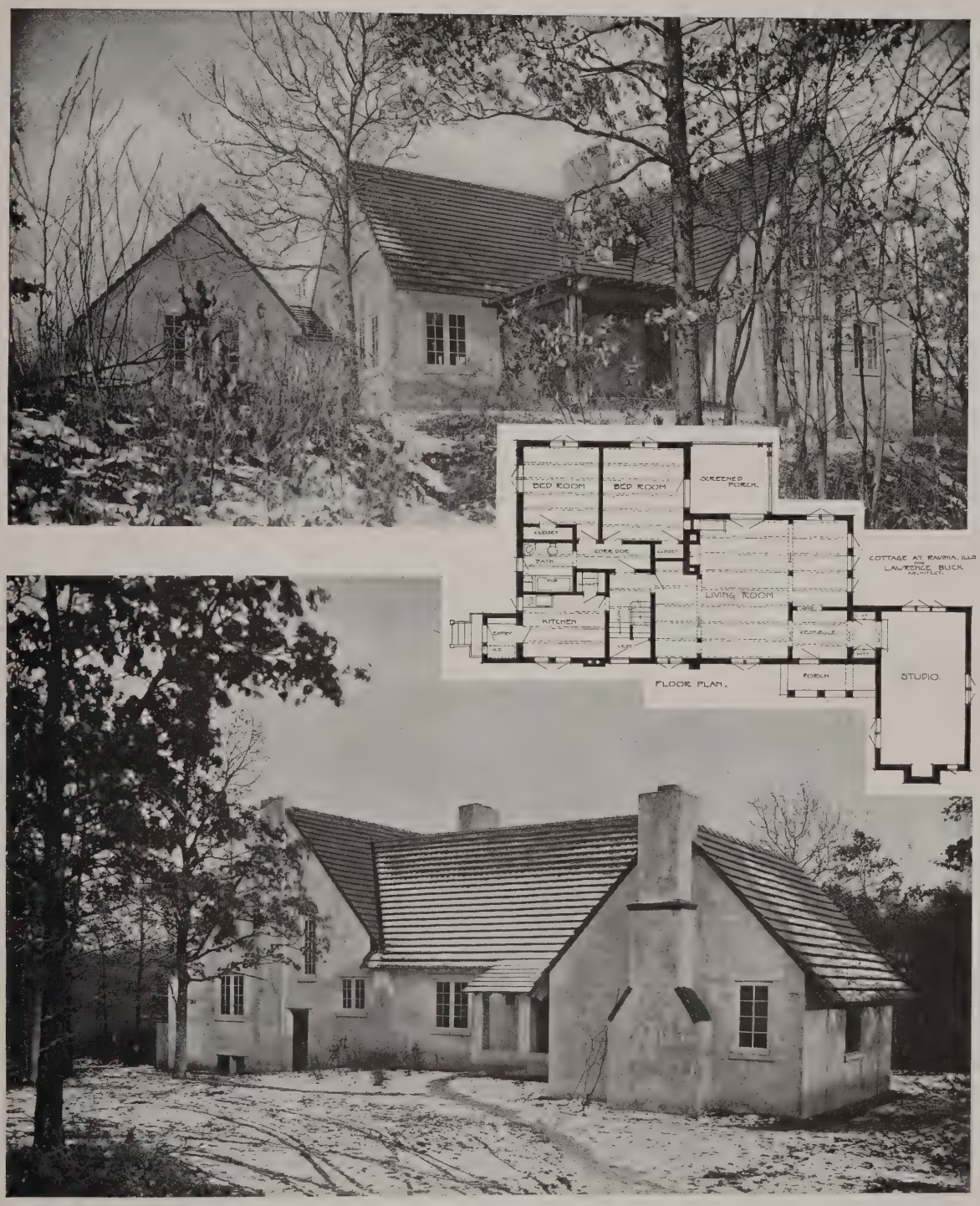
On the front door is a large handle and latch of wrought iron, hand made, and a knocker. The walls are plastered with cement outside and lime plaster inside. The plastering was done rather roughly, with only one coat both inside and out, directly on the tile walls. The house is heated with hot water including the unfinished portion of attic.

The electric lights are all hung from the ceiling, the wiring being in conduits between the two thicknesses of flooring.

All the interior woodwork was stained green, one coat of oil stain, except the beams in the ceiling which were given one coat of cold water paint, white.

The cost of the building was $7,000; about 18 cents per cubic foot. The insurance rate is 20 cents per $100 per year.

It may be interesting to know that another house I have recently built, also of hollow tile but with the usual hard-wood trim and floors, and finished in a more conventional manner, cost 22 cents per cubic foot, although it is built more compactly and does not cover as much ground and has a shingle roof.



HOUSE AT RAVINIA, ILL.

Walls of Natco hollow tile with plaster finish.
Lawrence Buck, Architect, Steinway Hall, Chicago, Ill.

A Natco Tile House at Chicago, Illinois

(Illustrated pages 53 and 54)

BY WALTER BURLEY GRIFFIN, ARCHITECT

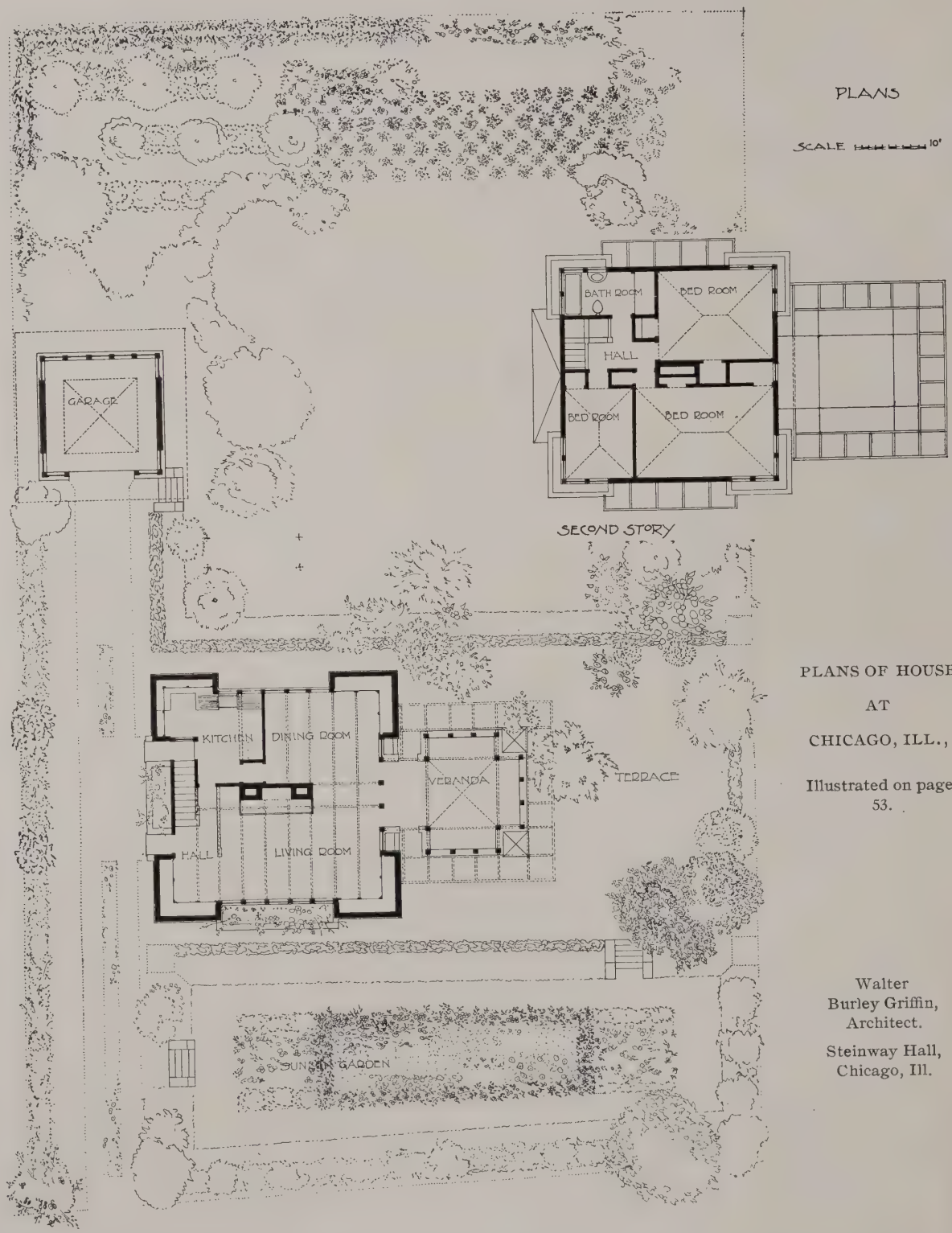
THE qualities which adapt terra cotta hollow tile construction to this sort of design are its comparative inexpensiveness and that it is one material from inside to out and the only one, so far, bone dry and self-insulated. Its facings inside and outside are both rough plastered. In the repeated large masses, laid out in dimensions, multiples of the one-foot blocks, the tile becomes a facile material for the mason. The experiment tried here of reversing the direction of the cells in alternate courses has resulted in no difficulties of construction while assuring better application of the mortar than in either of the other ways, at the same time reducing the circulation of enclosed air, which, through convection, must cause serious transmission of heat and cold through the wall.

Fireproof floors are the logical sequence to this type of wall construction. Next best is "mill construction," which overcomes some objectionable features such as dangerous fire-trap air spaces and large ceiling surfaces sure to crack in ordinary wood construction.

Ordinary house construction is the most cumbersome, primitive hand labor operation surviving in our specialized mechanical age. Moreover, not only are its processes disorganized, but the product shows all the defects of the crude methods and works out in complicated, irregular designs as the easiest way to cover the inevitable discrepancies and mistakes. Can we not take advantage of better methods by using simple, clean-cut forms and organized plans ?

The exceedingly small project of a house like this has no resources to be frittered away on features. In its designing, therefore, an effort has been made to make, as far as possible, of its living interior a single unit in effect, with one added separate unit, the veranda, required by the range of our climate between extremes of heat and cold. The simplest of all building forms, the square, is here used in each, and then in turn expressed internally and externally in every necessary appurtenance. It would seem that nothing more is needed than this natural development of the one condition to produce style, a style which, though lacking in association now, will surely gain it with age to a degree not possible to individually selected adaptations from other problems, inevitably confusing a logical solution of the one in hand. At any rate, working in this way no meaningless features are brought in, and a maximum of repetition secures a minimum in first cost and maintenance, and an adaptability to machine work.

HOUSE AT CHICAGO, ILL.
Built of Natco hollow tile with rough plaster finish.
Walter Burley Griffin, Architect, Steinway Hall, Chicago, Ill.
Plans shown on page 54.



PLANS OF HOUSE

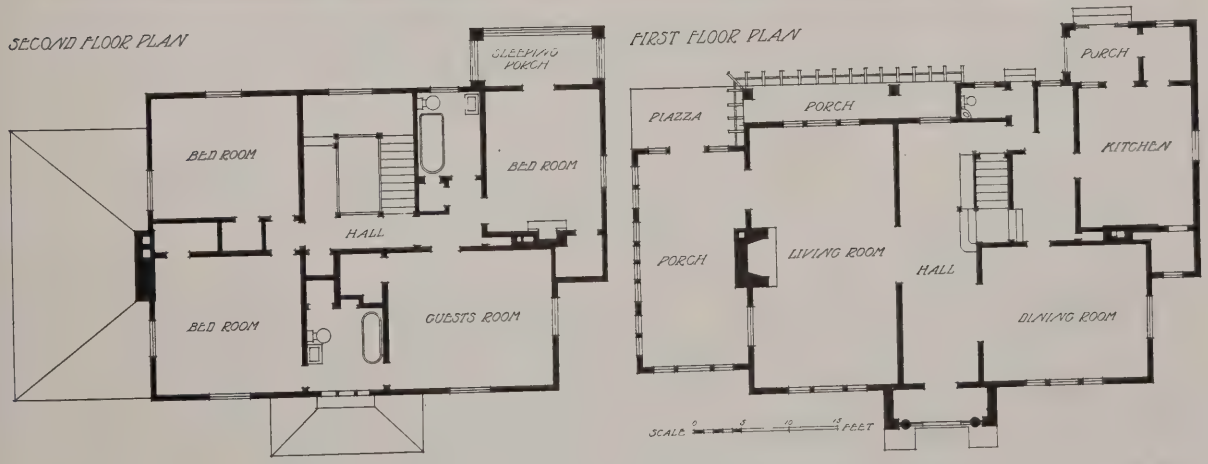
AT

CHICAGO, ILL.,

Illustrated on page 53.

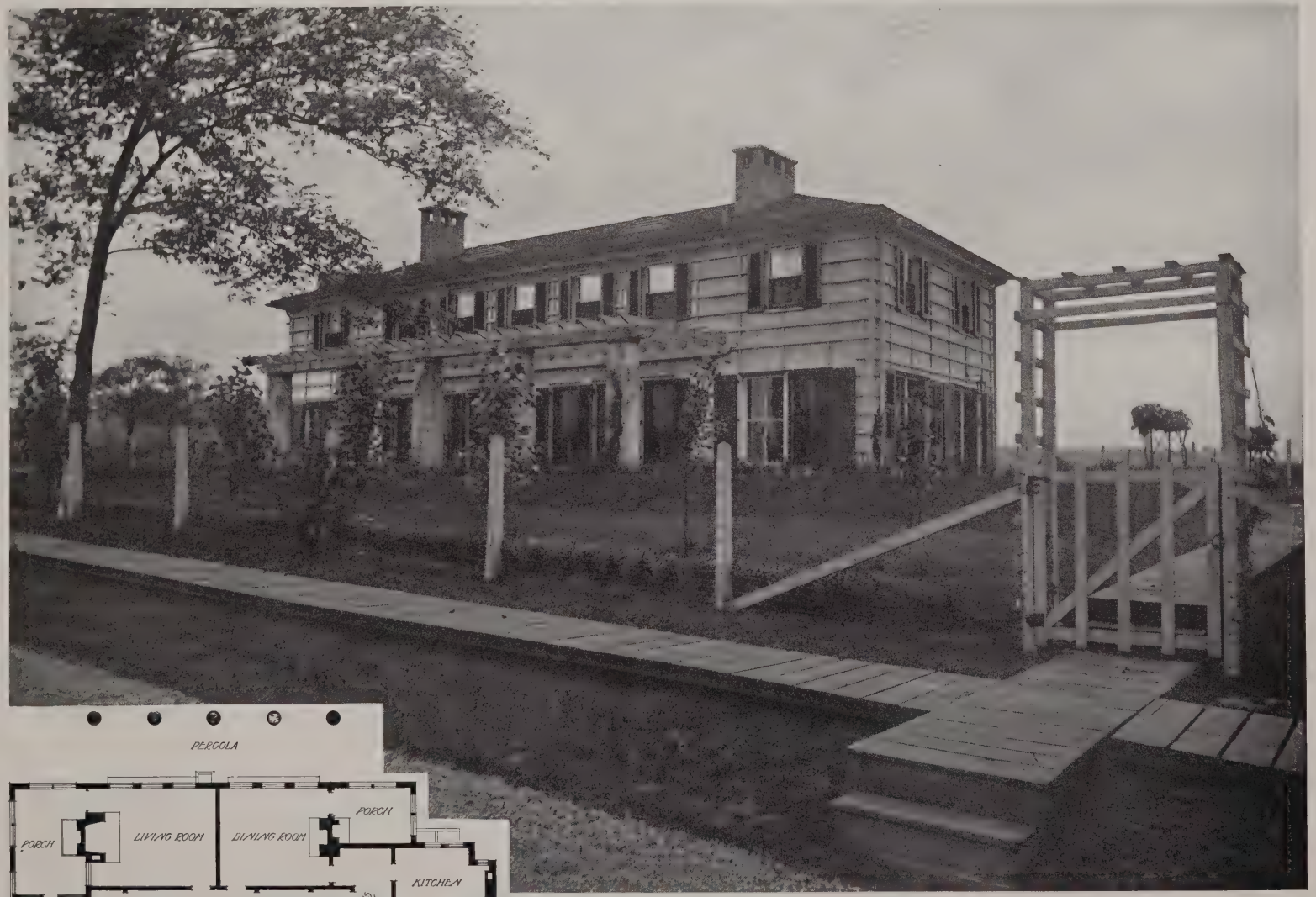
Walter
Burley Griffin,
Architect.

Steinway Hall,
Chicago, Ill.

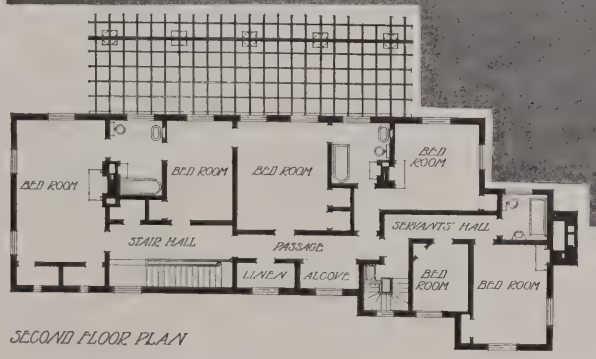


HOUSE AT GLEN RIDGE, N. J.

Walls of Natco hollow tile with plaster finish.
Frank Goodwillie, 346 4th Avenue, New York City.



HOUSE AT DUQUESNE, PA.
Walls of Natco hollow tile.
Janssen & Abbott, Architects, Renshaw Building, Pittsburgh, Pa.



SECOND FLOOR PLAN

HOUSE AT DUQUESNE, PA.
Walls of Natco hollow tile.
Janssen & Abbott, Architects, Renshaw Building, Pittsburgh, Pa.

HOUSE AT ENGLEWOOD, N. J.

Built of Natco hollow tile with stucco finish.

Hanemann & Cherry, Architects, 103 Park Avenue, New York City.

A Natco Tile House at Englewood, N. J.

(Illustrated page 58)

BY HANEMANN & CHERRY, ARCHITECTS

IN building this modest little cottage the watchword was economy from the start. The plan was limited, as the cost was not to exceed $5,000, which was to include a studio if possible. The owner desired a living room, dining room, pantry, kitchen, laundry, three bedrooms, sleeping porch, bath room and a servants' toilet. The walls are built of 6″ x 8″ x 12″ hollow tile blocks, waterproofed on the outside below the grade line and stuccoed above. The plaster on the interior is of two coats and is applied directly to the tile. Cedar shingles stained olive green with the casements' trim to match give a dignified color scheme to the exterior. The stucco finish is of a light brownish tint.

The interior is simply treated, ornament being used only where needed. The trim of the entrance hall, stair, living room and dining room is all of chestnut stained a warm brown and wax rubbed. The other rooms are finished in cypress stained in the same manner, except the bath room, which is in white. The studio was finished to harmonize with the cottage in design and color. It has an aviary projecting from the side which adds interest. The cottage cost $4,650 and the studio $500. This cost includes kitchen range, screens and hardware, all of which are of good quality.

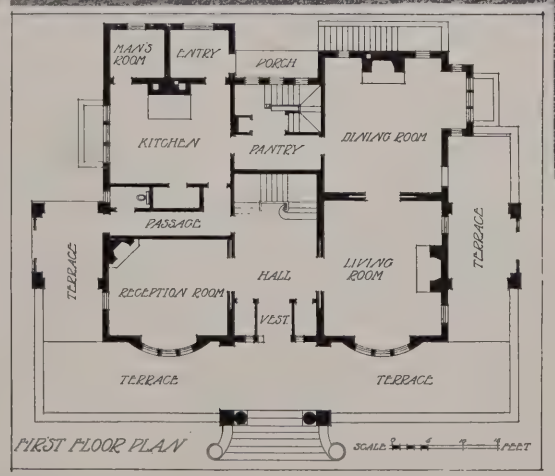
A Natco House at Hastings-on-Hudson, N. Y.

(Illustrated page 60)

BY LESTER KINTZING, ARCHITECT

HOLLOW tiles were used for all outside walls; 12″ x 12″ x 12″ for the foundations and 8″ x 12″ x 12″ above. The floors, roofs, and interior partitions are of frame construction, thus the house may be termed semi-fireproof; but the chief advantage of this type of construction is the insulation of the walls against heat and cold. The inside plaster was applied directly to the tile. There are fifteen rooms and four bath rooms, and the cost was approximately $20,000. There are eight fireplaces and a hot water system for heating. The floors in the first story are of white oak, and North Carolina pine was used in the second and third stories. The interior trim is in white enamel and birch with mahogany finish.

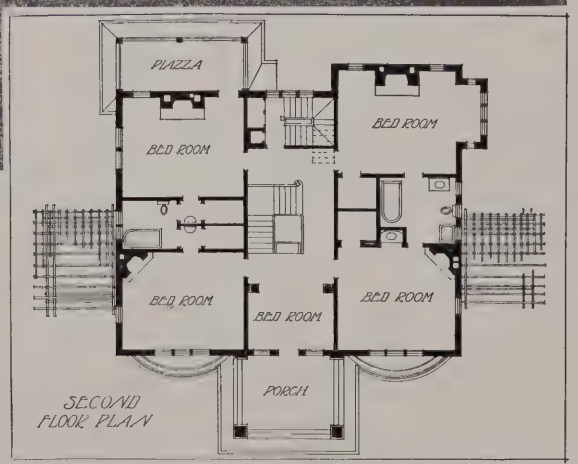
An interesting feature of the house is the roof. The idea was to soften all hard straight lines and sharp angles without attempting to imitate thatched roof effects. Shingles were steamed to make them pliable and laid in irregular lines, all sharp angles being rounded.

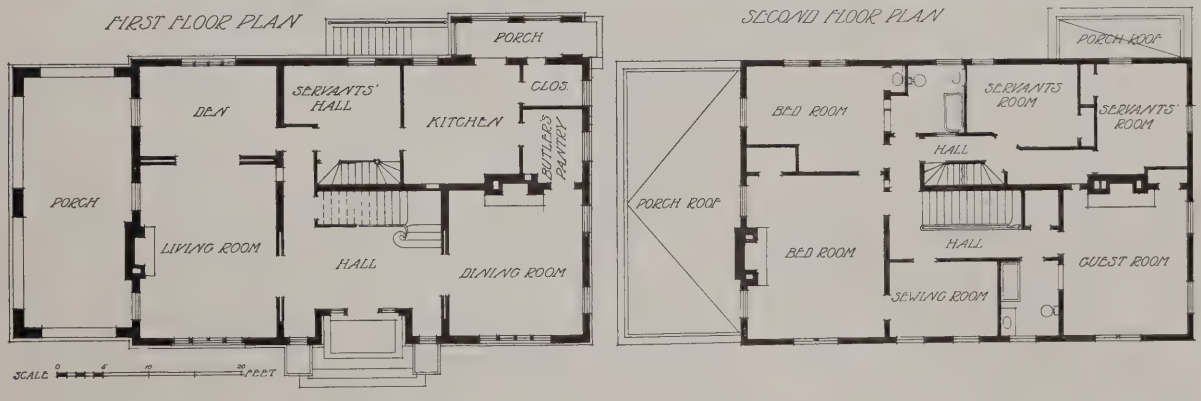


HOUSE AT
HASTINGS-ON-HUDSON, N. Y.

Walls of Natco hollow tile with stucco finish.

Lester Kintzing, Architect,
7 W. 42d Street, New York City.





HOUSE AT ENGLEWOOD, N. J.
Walls of Natco hollow tile with stucco finish.
Delano & Aldrich, Architects, 4 E. 39th St., New York City.

HOUSE AT ENGLEWOOD, N. J.

Walls of Natco hollow tile, with stucco finish.
Delano & Aldrich, Architects, 4 E. 39th St., New York City.

A Natco Tile House at Englewood, N. J.

(Illustrated pages 61 and 62)

BY DELANO & ALDRICH, ARCHITECTS

THE exterior walls of this house are built of Natco tiles, the outside surfaces being covered with a stucco of a light warm gray color. The roof is of red Spanish tiles.

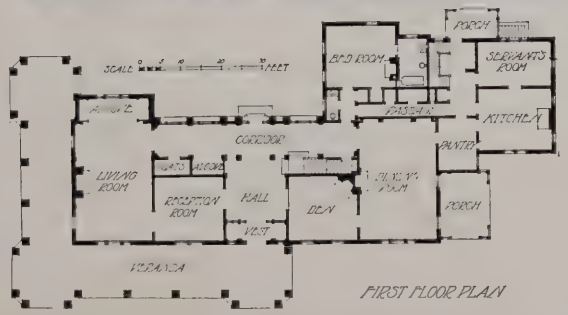
The general character of the interior is one of great simplicity, painted wood being used for trim throughout. The entrance is through a recessed porch, which is paved with brick, and leads to the central hall from which open the living rooms. The cost of the house complete was about $14,000.

A Natco Tile House at Garden City, L. I., N. Y.

(Illustrated page 64)

BY AYMAR EMBURY, II., ARCHITECT

THE house is of irregular plan about 135 feet long and averaging about 35 feet deep. The owner's desire was to have a house which, while containing ample room for the family and guests and necessary servants, would appear as simple and unostentatious as possible. The building was accordingly designed with a gambrel roof in a very free and modern adaptation of the Dutch Colonial style. Many of the older buildings of this type which were built in Long Island around Garden City were of shingles in the second story and stucco in the first, and this combination of materials was adopted for this house with the first story constructed of 12 inch hollow tile, a material particularly adapted for stucco finish as there is perfect adhesion of the wall coating to the blocks with no possibility of checking or cracking otherwise than by settlement, which has fortunately not occurred in this particular house. The plan shows a building of considerable size with seventeen bedrooms, including maids' rooms and nine baths, and was arranged with a view to getting as many rooms as possible facing the south. The scheme was therefore adopted of having corridors on all three floors running along the rear, or north side of the building, with all the principal living rooms and bedrooms on the front. The service wing was dropped back from the main façade with a service yard, etc., at the extreme end protected from view of the front of the house by a rose garden and pergola.

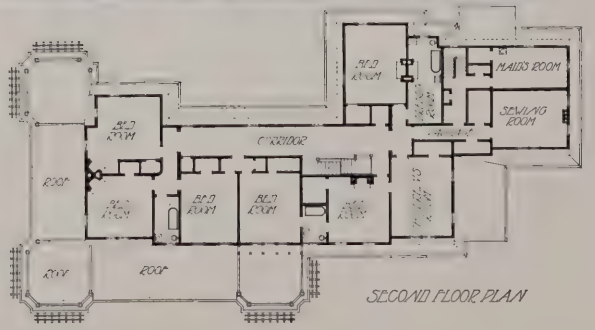


FIRST FLOOR PLAN

HOUSE AT GARDEN CITY, LONG ISLAND, N. Y.

Walls of Natco hollow tile.

Aymar Embury, II., Architect, 132 Madison Ave., New York City.



SECOND FLOOR PLAN

A Natco Tile House at Newark, N. J.

(Illustrated page 66)

BY HURD & SUTTON, ARCHITECTS

THE exterior is constructed of Natco hollow terra cotta tile finished with white cement stucco, and has a roof of matt-glazed green S-shaped tile.

The house is about 29′ 6″ x 48′ in dimensions, and contains upon the first floor a living room, sun parlor, entrance and stair hall, dining room, service pantry, kitchen, and enclosed entrance to cellar. There are four rooms upon the second floor, with a large bath room. The servants' quarters are located in the attic.

The rooms are finished throughout with red gum or hazel wood, including side walls of the living room, wainscoted to the ceiling, with paneled wainscot, bookcases in the library, and built-in buffet in the dining room. The bath room is tiled 7′ 6″ high and all plumbing fixtures are solid porcelain. This room is also provided with a shower bath compartment with complete needle and shower bath fixtures.

All windows throughout the house are of casement type.

The house is heated with a direct steam-heating system, and cost approximately $15,000.

The results obtained in this building, using the hollow tile method of construction, have been most satisfactory to both the owner and the architects.

A Natco Tile House at Wheeling, West Va.

(Illustrated page 70)

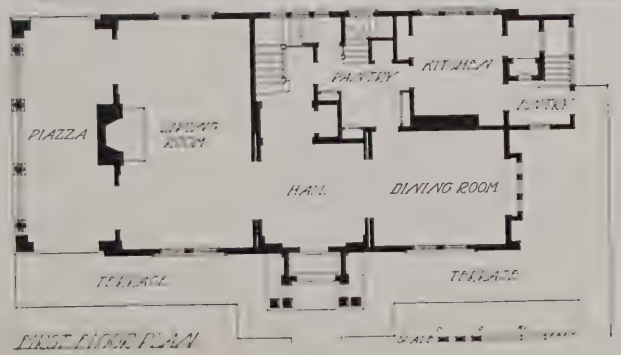
BY CHARLES W. BATES, ARCHITECT

THE side walls of the house, including gables, porch, and porte-cochère columns, etc., are of 8″ x 12″ x 12″ Natco Hollow Tile. The exterior is finished with slap-dash stucco with red French tile roof, Oriental brick chimneys and facing from grade line to water table.

The first floor is fireproofed, — combination system, hollow tile, reinforced concrete joists, alternating, and wood floors laid over nailing strips, filled between with light cinder concrete.

The interior finish is principally in white and mahogany, with oak floors. A herringbone brick floor is laid over the entire basement, and red quarry tile on front porch.

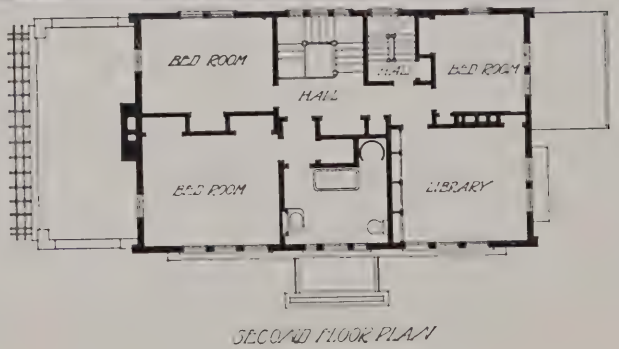
I have built many houses of this tile and consider it satisfactory in every particular. It gives a wonderfully stiff wall, very dry, warm in winter and cool in summer.



HOUSE AT
NEWARK, NEW JERSEY

Built of Natco hollow tile with stucco finish.

Hurd & Sutton, Architects, St. James Building, Broadway & 26th St., New York City.



A Natco Tile House at Wakefield, Mass.

(Illustrated page 68)

BY HARLAND A. PERKINS, ARCHITECT

SITUATED on a fairly open hilltop, exposed to the elements, and beyond the radius of reasonable fire protection, were the reasons for the use of the Natco tile for both walls and floors in the Wakefield house. To take advantage of the whole day's sunlight and the summer breezes, and to give a feeling of size that it might not be overtopped by a secondary building of equal bulk on the same premises, were the reasons for the rather unusual and extended form of floor plan.

The center section on the first floor, the living hall, is finished in fumed oak with high wainscot and vaulted plaster ceiling beams done in a deep russet tone, the stairs being so placed as to count strongly in the design of the room and in first impression to the visitor. Opening from the hall on the left is the parlor with its low wainscot and book shelves in mahogany, with old blue damask wall covering, and glass doors leading to the open porch. To the right of the hall is the dining room with dark oak panels and ceiling beams, and walls covered with tapestry in which green and brown tones predominate. A sunny glass porch leads from the dining room. Behind the hall in the rear wing is the service section, well isolated. On the second floor instead of the usual useless corridor is a spacious sitting room from which the suites of chambers lead off.

In spite of the handicap which so rambling a plan offers, two winters have proven the house to be absolutely warm and dry even with furnace heat.

A Natco Tile Cottage at Concord, Mass.

(Illustrated page 69)

BY JAMES PURDON, ARCHITECT

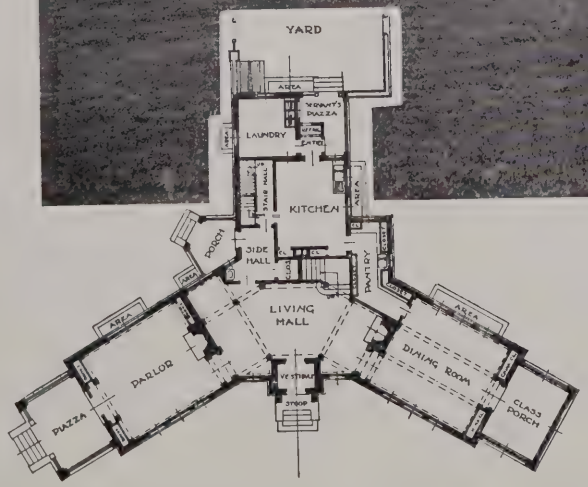
THE exterior walls are of Natco Hollow Tile 8″ x 12″ x 12″. The exterior finish is of light cream cement stucco. On the interior the tiles were given a coat of waterproof paint and then two coats of regular lime mortar plaster. The roof is covered with light gray-green shingles. The blinds are painted dark gray-green. The finish throughout is very simple and plain. The total cost of the house, including hot-air heating, plumbing, and electric lighting, was about $3,500. An estimate was obtained for constructing the house with shingle walls instead of tile. The tiles cost approximately eight per cent more.

A Natco Tile House at Bryn Athyn, Pa.

(Illustrated page 71)

BY WALTER F. PRICE, ARCHITECT

THE walls are built of Natco tiles 8″ x 10″, furred upon the inside and rough cast on the outside, with a rather smooth finish of a whitish gray color. The interior finish is in rift sawed yellow pine. The total cost of the house was approximately $15,000.

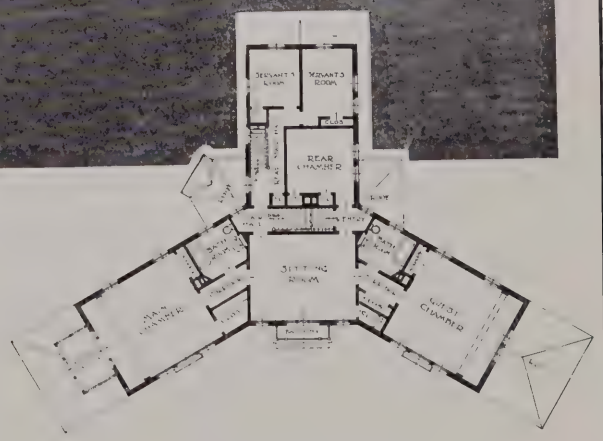


FIRST FLOOR PLAN

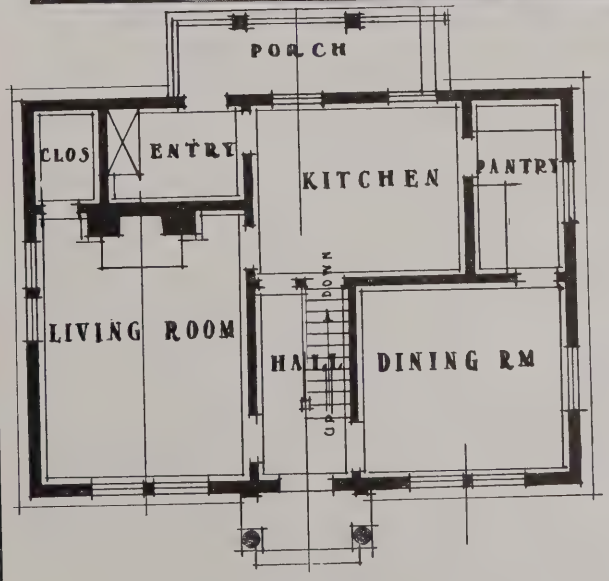
HOUSE AT CHESTNUT HILL,
WAKEFIELD, MASS.

Walls, floors, and partitions of Natco hollow tile.

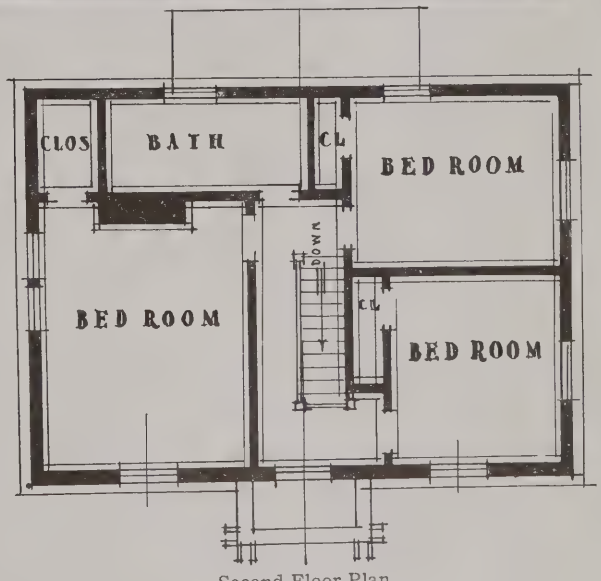
Harland A. Perkins, Architect, 194 Boylston St., Boston, Mass.



SECOND FLOOR PLAN

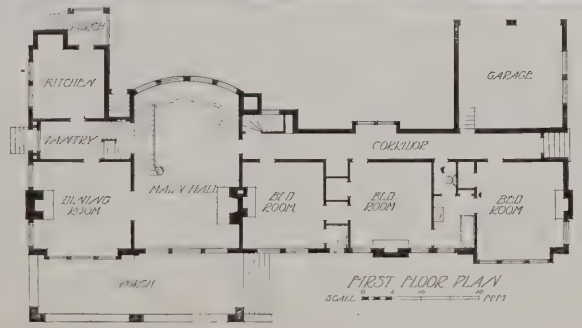


First Floor Plan.



Second Floor Plan.

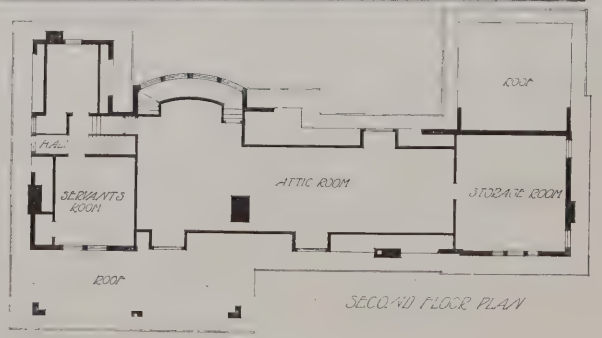
COTTAGE AT CONCORD, MASS.
Walls of Natco hollow tile with stucco finish.
James Purdon, Architect, 8 Beacon St., Boston, Mass.

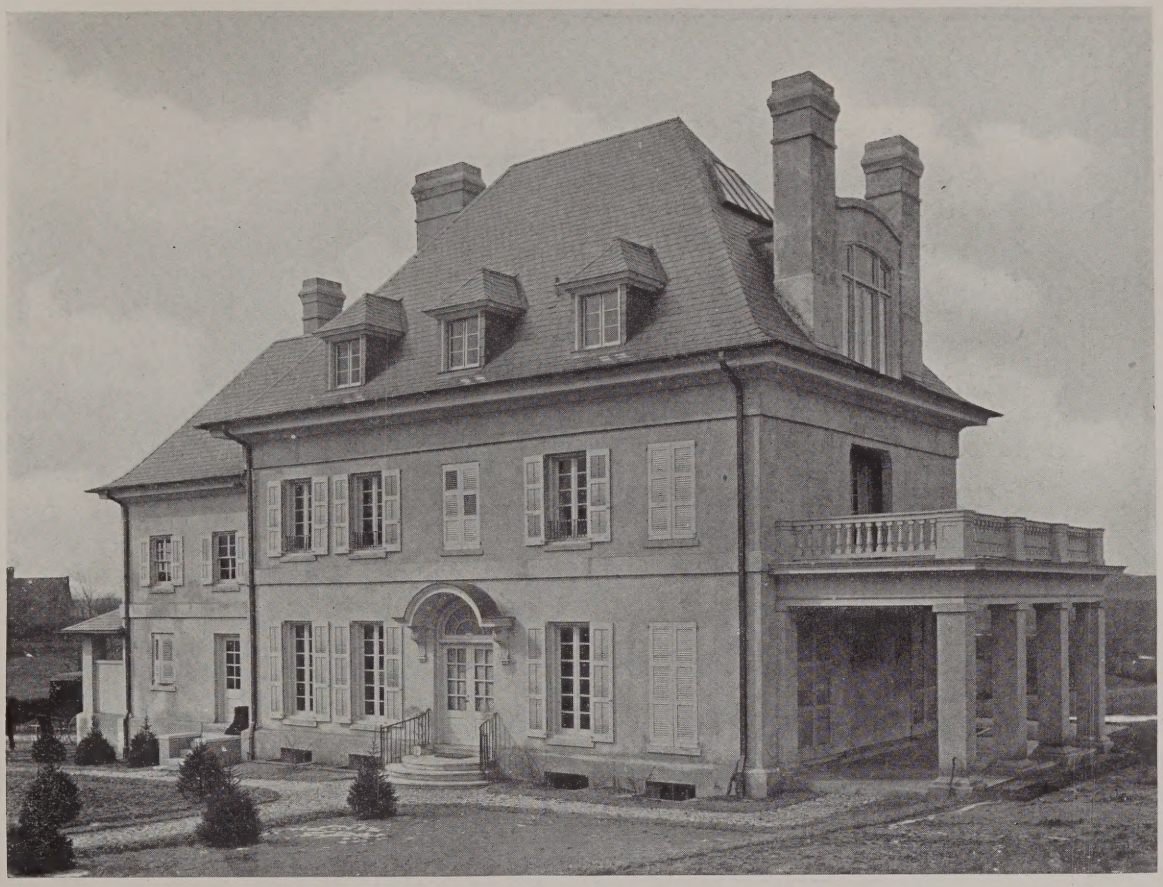


HOUSE AT PLEASANT VALLEY, WHEELING, W. VA.

Walls of Natco hollow tile with brick and stucco finish.

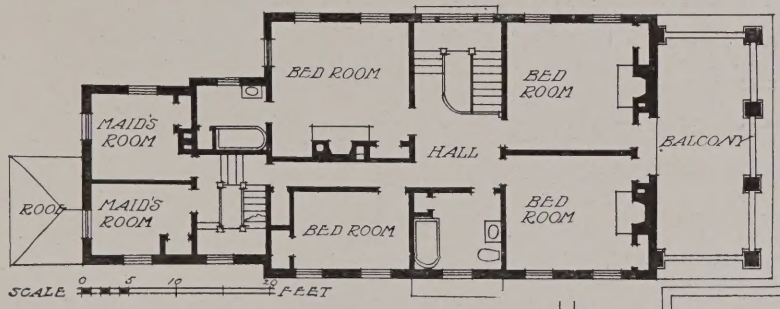
Charles W. Bates, Architect, Board of Trade Building, Wheeling, W. Va.



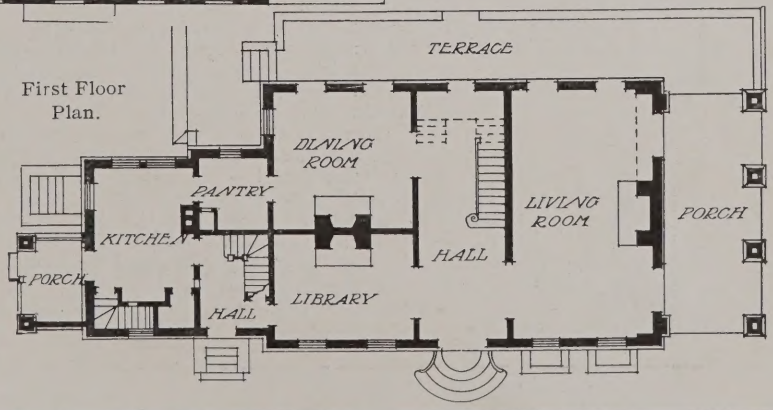


HOUSE AT
BRYN ATHYN, PA.

Built of Natco hollow tile with rough plaster finish.



Second Floor Plan.



First Floor Plan.

Walter F. Price,
Architect.

714 Walnut Street,
Philadelphia, Pa.

AVERY LIBRARY
COLUMBIA UNIVERSITY

Natco Hollow Tile

TWO scientifically established facts express the principal points of NATCO HOLLOW TILE for residence construction, viz :

1. Well burned clay cannot be destroyed by fire.
2. A dead air space is the best insulation against heat or cold and consequently the best protection against the destructiveness of high temperatures as generated in burning buildings.

It is worth while for both architect and owner to bear in mind that the kind of buildings herein illustrated and described are not only fire resisting, but are of

ENDURING MASONRY CONSTRUCTION THROUGHOUT

That by reason of the indestructibility of the material and their substantial construction these houses

COST FAR LESS FOR MAINTENANCE AND REPAIRS

than in the case with buildings of frame or brick and wood.

Floors of wooden joist construction warp and crack. Floors of Firepoof Hollow Tile endure for all time.

Exteriors of frame houses must be painted frequently, walls of Cement Coated Natco Hollow Tile, never.

Stucco applied over expanded metal has never proven satisfactory. Dampness will invariably work through and will cause the wood studs and siding to expand and settle. This will cause unsightly cracks to appear in the wall.

This difficulty has been eliminated by the use of Hollow Tile, which not only forms an ideal bond with the stucco, but furnishes a masonry wall which cannot settle.

Walls of wood or brick absorb, retain, and carry to the interior of the house the frosts of winter and the heat of summer. The air space in walls of Natco Hollow Tile furnishes complete insulation against atmospheric conditions, thereby reducing the cost of heating to a minimum, and buildings of this material compared with brick, frame, stone, concrete, or a combination of all four are

WARMER IN WINTER — COOLER IN SUMMER

Houses with walls of brick, concrete or frame, and furred with wood, carry sound and vibration, and are subject to the penetration and ravages of vermin. Natco Hollow Tile Houses require no furring and are

MOISTURE PROOF — SOUND PROOF — VERMIN PROOF

When it is considered that a residence with all these advantages and completely fireproof can be built at as low cost as one of brick, brick and wood, stone and wood, or concrete, and comparing favorably with frame, can there be any hesitation in adopting this modern method of construction?

In considering the illustrations and plans in this book it should be noted that they are simply types and examples of what has been and can be accomplished with Natco Hollow Tile, and the methods of construction in use to achieve these results.

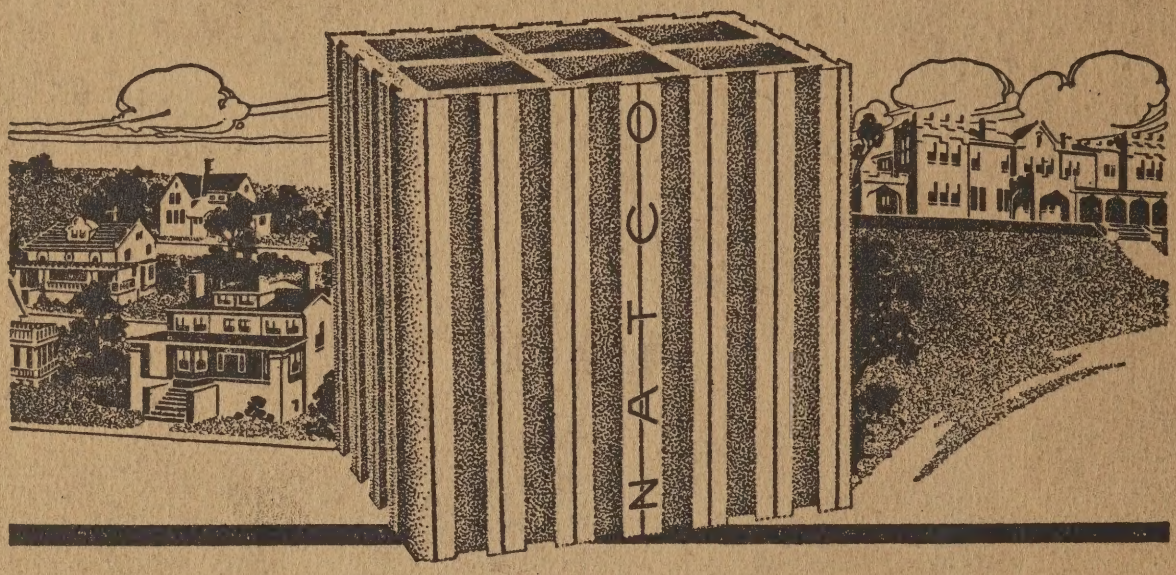
A house of any desired size or architectual appearance may be built on the general ideas advanced herein. These ideas are offered as an aid to the architect in formulating plans for small buildings of substantial fireproof construction, and any architect can readily adapt these principles to any building which he may be planning.

It will be seen that structural steel, which forms such a great item of cost in large, standard fireproof buildings, is entirely eliminated in buildings of the type considered in this work. The only manner in which steel is used at all in these buildings is in the shape of small tension members for reinforcing purposes.

It is this elimination of structural steel, and the simplicity of Hollow Tile construction, which makes it possible to build an enduring masonry residence fireproof throughout, within the limits of cost established by the average financial resources.

Unless each Tile bears the word "NATCO" impressed in the clay, it is not genuine.

NATCO HOLLOW TILE



AS a result of the great demand that has developed for Natco Hollow Tile many other concerns have engaged in making products imitating the design and appearance of "NATCO."

Samples of such imitations may often compare well with "NATCO" and the argument is invariably lower price. The vital difference becomes clear only in the delivery of the material in quantities for actual construction, and affects for all time the investment worth of the building.

Only genuine "NATCO" has behind it the vast experience and modern equipment of this company, whose methods and materials have fireproofed most of America's great business and public structures.

The cost of "NATCO" is only slightly higher than imitations, but the added living and market values of the resulting building are great.

NATCO HOLLOW TILE is rapidly superseding older forms of construction for all moderate-sized buildings, residence, commercial, and industrial. It is fireproof, decay-proof, moisture-proof, vermin-proof. Buildings of "NATCO" are cooler in summer, warmer in winter.

NATIONAL·FIRE·PROOFING·COMPANY

Offices in all principal cities.

PITTSBURGH, PA.